Question 1

Correct

Mark 2.50 out of 2.50

Flag question

Suppose we connect a non-Ohmic resistance R_1 and an Ohmic resistance $R_2 > R_1$ in series in a circuit, which of the following is true?

- a. The current in R_2 is greater than the current in R_1.
- b. The potential difference across R_1 is greater than the potential difference across R_2.
- c. There is a linear relation between the total resistance and the current in R_2.
- d. The potential difference across R_1 is smaller than the potential difference across R_2. ✔
- e. The slope of the total potential difference across the two resistances vs. the current in R_2 is $R_1 + R_2$.

Your answer is correct.

The correct answer is:
The potential difference across R_1 is smaller than the potential difference across R_2.

Question 2

Correct

Mark 2.50 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true during the experiment?

a. The power dissipated by the source is constant.

b. The current is constant.

c. We vary the load resistance but keep the emf of the power supply constant. ✔

d. The power dissipated by the load resistance is always greater than the power dissipated by the source.

e. We keep the potential difference across the load resistance constant.

Your answer is correct.

The correct answer is: We vary the load resistance but keep the emf of the power supply constant.

Question 3

Correct

Mark 2.50 out of 2.50

Flag question

Suppose you have several Ohmic wires made from the same material with different lengths L, different radii r. Then you will obtain:

a. an inverse relation between the current and the length of the wire if you vary the radius of the wire and keep the emf of the power supply constant.

b. an inverse relation between the current and the square of the radius if you vary the radius of the wire and fix the emf of the power supply and length of the wire.

c. a linear relation between the length of the wire and the current if you fix the emf of the power supply and wire length.

d. an inverse relation between the length of the wire and the current if you fix the emf of the power supply and length and radius of the wire.

e. a linear relation between the square of the radius and the current if you vary the radius of the wire and fix the length of the wire and the emf of the power supply. ✔

Your answer is correct.

The correct answer is:
a linear relation between the square of the radius and the current if you vary the radius of the wire and fix the length of the wire and the emf of the power supply.

Question 4

Correct

Mark 2.50 out of 2.50

Flag question

Which of the following is true in the first part of the electric Field Mapping Experiment?

a. The galvanometer measures the electric field between the anode and the cathode.

b. If the sliding contact along the rheostat is kept at the same position there is only one position of the pointer between the two electrodes for which the galvanometer reads zero.

c. If the reading of the galvanometer for a given position of the pointer and a given position of the sliding contact along the rheostat is zero, then if the sliding contact is moved the galvanometer will be different from zero. ✔

d. The galvanometer is used to find points between the two electrodes that have the same potential as the cathode.

e. The galvanometer reads the potential difference between the pointer and the cathode.

Your answer is correct.

The correct answer is: If the reading of the galvanometer for a given position of the pointer and a given position of the sliding contact along the rheostat is zero, then if the sliding contact is moved the galvanometer will be different from zero.

Question 5

Incorrect

Mark 0.00 out of 2.50

Flag question

Suppose you used a given power supply with emf V_0 Volt in the Electric Field Mapping experiment and the electrode separation is L. For points along the line perpendicular between the centers of electrodes you measure V, with the the positive terminal of the voltmeter connected to the anode and the negative terminal connected to the pointer which is placed at a point in the tray along the line, a distance d from the anode. Then:

a. The positive terminal of the voltmeter should be connected to the cathode and the negative terminal to the point between the two electrodes.

b. The slope of V vs. d is negative. ✖

c. There is a linear relation between V_0 and d.

d. The slope of the calibration curve depends on the emf of the power supply only.

e. The slope of the calibration curve is determined by emf of the power supply and the electrode separation.

Your answer is incorrect.

The correct answer is:
The slope of the calibration curve is determined by emf of the power supply and the electrode separation.

Question 6

Correct

Mark 2.50 out of 2.50

Flag question

During the Wheatstone Bridge experiment, when the pointer is at the balance point then:

a. The potential difference across the known resistance is equal to the potential difference between the balance point and the point of contact between the known and unknown resistances.

b. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance. ✔

c. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

d. The potential difference across the unknown resistance is equal to the potential difference between the end of the wire connected to the known resistance.the balance point.

e. The potential difference across the unknown resistance is equal to the potential difference across known resistance.

Your answer is correct.

The correct answer is:
The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance.

Question 7

Correct

Mark 2.50 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true?

a. The maximum current in the circuit is when the load resistance is equal to the internal resistance.

b. When the load and internal resistances are equal the power dissipated in them are equal. ✔

c. The power generated by the battery during the experiment is constant.

d. When load and internal resistances are the same the current and power in the circuit are maximum.

e. The power generated by the battery does not depend on the load resistance.

Your answer is correct.

The correct answer is:
When the load and internal resistances are equal the power dissipated in them are equal.

Question 8

Correct

Mark 2.50 out of 2.50

Flag question

In the Potentiometer experiment, in order to obtain the linear relation in the calibration the following has to be satisfied:

- a. The potential for points on the wire must be independent of their position,
- b. the current in the wire can vary during the experiment but the wire must be Ohmic and uniform.
- c. the emf of the power can vary during the experiment but the wire must be Ohmic, .uniform, and have a length of one meter.
- d. The emf of the power supply must vary during the experiment but the wire must be Ohmic and uniform.
- e. We should use an Ohmic uniform wore and a power supply with a fixed emf. ✔

Your answer is correct.

The correct answer is: We should use an Ohmic uniform wore and a power supply with a fixed emf.

Question 1

Correct

Mark 2.50 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true?

- a. The minimum current in the circuit is when the load resistance is minimum.
- b. When load and internal resistances are the same the current in the circuit is maximum.
- c. The power generated by the battery is dissipated by both the load and internal resistances. ✔
- d. The power generated by the battery does not depend on the load resistance.
- e. The power generated by the battery during the experiment is constant.

Your answer is correct.

The correct answer is:
The power generated by the battery is dissipated by both the load and internal resistances.

Question 2

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true during the experiment?

- a. We keep the potential difference across the load resistance constant. ✖
- b. The current is constant.
- c. We vary the load resistance but keep the emf of the power supply constant.
- d. The power dissipated by the source is constant.
- e. The power dissipated by the load resistance is always greater than the power dissipated by the source.

Your answer is incorrect.

The correct answer is: We vary the load resistance but keep the emf of the power supply constant.

Question 3

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Electric Field Mapping experiment, let the two electrodes be separated by a distance L and the emf of the power supply be V_0 . If you measure V for points along the straight line joining the centers of the electrodes and perpendicular to them, by connecting the positive terminal of the voltmeter to the anode and the negative terminal to the pointer at a point in the tray a distance d from the anode, then:

- a. The slope of V vs. d is negative.
- b. The positive terminal of the voltmeter should be connected to the cathode and the negative terminal to the point between the two electrodes.
- c. There is a linear relation between V_0 and L. ✖
- d. L and V_0 should remain fixed during the experiment.
- e. The slope of the calibration curve is positive and depends on V_0 only.

Your answer is incorrect.

The correct answer is:
L and V_0 should remain fixed during the experiment.

Question 4

Correct

Mark 2.50 out of 2.50

Flag question

In the Potentiometer experiment, in order to obtain the linear relation in the calibration the following has to be satisfied:

a. the current in the wire can vary during the experiment but the wire must be Ohmic and uniform.

b. the emf of the power can vary during the experiment but the wire must be Ohmic, .uniform, and have a length of one meter.

c. The potential for points on the wire must be independent of their position,

d. We should use an Ohmic uniform wore and a power supply with a fixed emf. ✔

e. The emf of the power supply must vary during the experiment but the wire must be Ohmic and uniform.

Your answer is correct.

The correct answer is: We should use an Ohmic uniform wore and a power supply with a fixed emf.

Question 5

Correct

Mark 2.50 out of 2.50

Flag question

Suppose you have several Ohmic wires made from the same material with different lengths L, different radii r. Then you will obtain:

- a. a linear relation between the square of the radius and the current if you vary the radius of the wire and fix the length of the wire and the emf of the power supply. ✔
- b. an inverse relation between the current and the length of the wire if you vary the radius of the wire and keep the emf of the power supply constant.
- c. a linear relation between the length of the wire and the current if you fix the emf of the power supply and wire length.
- d. an inverse relation between the length of the wire and the current if you fix the emf of the power supply and length and radius of the wire.
- e. an inverse relation between the current and the square of the radius if you vary the radius of the wire and fix the emf of the power supply and length of the wire.

Your answer is correct.

The correct answer is:
a linear relation between the square of the radius and the current if you vary the radius of the wire and fix the length of the wire and the emf of the power supply.

Question 6

Correct

Mark 2.50 out of 2.50

Flag question

If we connect an Ohmic resistance R_1 and a non-Ohmic resistance $R_2 > R_1$ in series in a circuit, which of the following is true?

a. There is a linear relation between the total resistance and the current in R_2.

b. The potential difference across R_1 is less than the potential difference across R_2. ✔

c. The current in R_1 is less than the current in R_2.

d. The slope of the line of the total potential difference across the two resistances vs. the current in R_2 is $R_1 + R_2$.

e. The current in R_1 is greater than the current in R_2.

Your answer is correct.

The correct answer is:
The potential difference across R_1 is less than the potential difference across R_2.

Question 7

Correct

Mark 2.50 out of 2.50

Flag question

In the electric Field Mapping Experiment, which of the following is true in the first part?

a. If the sliding contact along the rheostat is kept at the same position there is only one position of the pointer between the two electrodes for which the galvanometer reads zero.

b. The galvanometer measures the electric field between the anode and the cathode.

c. The galvanometer reads the potential of the position of the pointer.

d. Suppose the galvanometer reads zero when the pointer is at a point between the two electrodes for a given position of the sliding contact along the rheostat. If the sliding contact is now moved while keeping the pointer at the same position the galvanometer will measure a current. ✔

e. The galvanometer is used to find points between the two electrodes that are at the same potential as the cathode.

Your answer is correct.

The correct answer is: Suppose the galvanometer reads zero when the pointer is at a point between the two electrodes for a given position of the sliding contact along the rheostat. If the sliding contact is now moved while keeping the pointer at the same position the galvanometer will measure a current.

Question 8

Incorrect

Mark 0.00 out of 2.50

Flag question

During the Wheatstone Bridge experiment, when the pointer is at the balance point then:

- a. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance. ✖
- b. The potential difference across the unknown resistance is equal to the potential difference across known resistance.
- c. The potential difference between the balance point and the point of contact between the unknown and known resistances is equal to the potential difference across the known resistance .
- d. The potential difference across the known resistance is equal to the potential difference between the the end of the wire connected to the unknown resistance and balance point .
- e. The potential difference across the known resistance is equal to the potential difference between the end of the wire connected to the known resistance and the balance point.

Your answer is incorrect.

The correct answer is:
The potential difference across the known resistance is equal to the potential difference between the end of the wire connected to the known resistance and the balance point.

Question 1

Correct

Mark 2.50 out of 2.50

Flag question

In the Potentiometer experiment, in order to obtain the linear relation in the calibration the following has to be satisfied:

- a. We should use an Ohmic uniform wore and a power supply with a fixed emf. ✔
- b. the current in the wire can vary during the experiment but the wire must be Ohmic and uniform.
- c. the emf of the power can vary during the experiment but the wire must be Ohmic, .uniform, and have a length of one meter.
- d. The potential for points on the wire must be independent of their position,
- e. The emf of the power supply must vary during the experiment but the wire must be Ohmic and uniform.

Your answer is correct.

The correct answer is: We should use an Ohmic uniform wore and a power supply with a fixed emf.

Question 2

Correct

Mark 2.50 out of 2.50

Flag question

If we connect an Ohmic resistance R_1 and a non-Ohmic resistance $R_2 > R_1$ in series in a circuit, which of the following is true?

- a. The potential difference across R_1 is less than the potential difference across R_2. ✔
- b. The current in R_1 is greater than the current in R_2.
- c. The slope of the line of the total potential difference across the two resistances vs. the current in R_2 is $R_1 + R_2$.
- d. The current in R_1 is less than the current in R_2.
- e. There is a linear relation between the total resistance and the current in R_2.

Your answer is correct.

The correct answer is:
The potential difference across R_1 is less than the potential difference across R_2.

Question 3

Correct

Mark 2.50 out of 2.50

Flag question

In the electric Field Mapping Experiment, which of the following is true in the first part?

a. The galvanometer is used to find points between the two electrodes that are at the same potential as the cathode.

b. The galvanometer measures the electric field between the anode and the cathode.

c. Suppose the galvanometer reads zero when the pointer is at a point between the two electrodes for a given position of the sliding contact along the rheostat. If the sliding contact is now moved while keeping the pointer at the same position the galvanometer will measure a current. ✔

d. The galvanometer reads the potential of the position of the pointer.

e. If the sliding contact along the rheostat is kept at the same position there is only one position of the pointer between the two electrodes for which the galvanometer reads zero.

Your answer is correct.

The correct answer is: Suppose the galvanometer reads zero when the pointer is at a point between the two electrodes for a given position of the sliding contact along the rheostat. If the sliding contact is now moved while keeping the pointer at the same position the galvanometer will measure a current.

Question 4

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true?

a. When load and internal resistances are the same the current in the circuit is maximum.

b. The power generated by the battery does not depend on the load resistance.

c. The power generated by the battery during the experiment is constant.

d. The minimum current in the circuit is when the load resistance is minimum. ✖

e. The power generated by the battery is dissipated by both the load and internal resistances.

Your answer is incorrect.

The correct answer is:
The power generated by the battery is dissipated by both the load and internal resistances.

Question 5

Correct

Mark 2.50 out of 2.50

Flag question

During the Wheatstone Bridge experiment, when the pointer is at the balance point then:

- a. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance. ✔
- b. The potential difference across the unknown resistance is equal to the potential difference across known resistance.
- c. The potential difference across the known resistance is equal to the potential difference between the balance point and the point of contact between the known and unknown resistances.
- d. The potential difference across the unknown resistance is equal to the potential difference between the end of the wire connected to the known resistance.the balance point.
- e. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

Your answer is correct.

The correct answer is:
The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance.

Question 6

Correct

Mark 2.50 out of 2.50

Flag question

In the Electric Field Mapping experiment, you used two electrodes separated by a distance L and a power supply with emf V_0. You measure V for points along a straight line perpendicular to the electrodes and joining their centers by connecting the negative terminal of the voltmeter to the cathode and the positive terminal to the pointer placed at a point in the tray along the line a distance d from the cathode. Which of the following is true?

- a. You should vary d but keep V_0 fixed. ✔
- b. The slope of V vs. d is positive and depends on V_0 only.
- c. The positive terminal of the voltmeter should be connected to the cathode and the negative terminal to the point between the two electrodes.
- d. The slope of the calibration curve is negative.
- e. There is a linear relation between d and L.

Your answer is correct.

The correct answer is:
You should vary d but keep V_0 fixed.

Question 7
Correct
Mark 2.50 out of 2.50
Flag question

Suppose you have several Ohmic wires made from the same material with different lengths L, different radii r. Then you will obtain:

a. an inverse relation between the length of the wire and the current if you fix the emf of the power supply and length and radius of the wire.

b. a linear relation between the length of the wire and the current if you fix the emf of the power supply and length of the wire.

c. a linear relation between the current and the square of the radius if you vary the radius of the wire and fix the emf of the power supply and length of the wire. ✔

d. an inverse relation between the current and the length of the wire if you vary the radius of the wire and the emf of the power supply.

e. an inverse relation between the current and the radius if you vary the radius of the wire and fix the emf of the power supply and length of the wire.

Your answer is correct.

The correct answer is:
a linear relation between the current and the square of the radius if you vary the radius of the wire and fix the emf of the power supply and length of the wire.

Question 8

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true during the experiment?

- a. The potential difference across the load resistance is constant.
- b. The power supply does not dissipate any power.
- c. The power dissipated by the source is constant. ✖
- d. Both the load resistance and the current are variable.
- e. The current is independent of the load resistance value.

Your answer is incorrect.

The correct answer is: Both the load resistance and the current are variable.

Question 1

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Electric Field Mapping experiment, suppose you used a given power supply with emf V_0 Volt and put the electrode separation at L cm. Then you measure V for points along a straight line perpendicular to the electrodes, joining the centers of the positive and negative electrodes. You connect the positive terminal of the voltmeter to the anode and the negative terminal to the pointer placed at a point in the tray along the line joining the two electrodes, a distance d from the anode. Which of the following is true?

- a. The slope of V vs. d is negative. ✖
- b. The slope of V vs. d depends on V_0 only.
- c. The positive terminal of the voltmeter should be connected to the cathode and the negative terminal to the point between the two electrodes.
- d. The slope of V vs d is determined by V_0 and L.
- e. There is a linear relation between V_0 and d.

Your answer is incorrect.

The correct answer is:
The slope of V vs d is determined by V_0 and L.

Question 2

Not answered

Marked out of 2.50

Flag question

If we connect an Ohmic resistance R_1 and a non-Ohmic resistance $R_2 > R_1$ in series in a circuit, which of the following is true?

a. The current in R_2 is greater than the current in R_1.

b. There is a linear relation between the total resistance and the current in R_1.

c. The slope of the total potential difference across the two resistances vs. the current in R_1 is $R_1 + R_2$.

d. The potential difference across R_2 is greater than the potential difference across R_1.

e. The current in R_1 is greater than the current in R_2.

Your answer is incorrect.

The correct answer is:
The potential difference across R_2 is greater than the potential difference across R_1.

Question 3

Not answered

Marked out of 2.50

Flag question

You have done the Wheatstone Bridge experiment using a power supply with emf V_0 and a wire of length L and resistivity ρ and determined the balance point for unknown resistance R_x, known resistance R_s, Which of the following will keep fixed the ratio of L_2/L_1?

- a. Changing emf of the power supply and keeping everything else the same.
- b. Changing the known resistance and fixing other variables.
- c. Changing the unknown resistance and fixing other variables.
- d. Varying the length of the wire and keeping everything else the same.
- e. Changing the resistivity of the wire and keeping everything else the same.

Your answer is incorrect.

The correct answer is:
Varying the length of the wire and keeping everything else the same.

Question **4**

Not answered

Marked out of 2.50

Flag question

In the Potentiometer experiment, in order to obtain the linear relation in the calibration the following has to be satisfied:

- a. The potential difference across the wire cannot depend on the resistivity of the wire.
- b. the emf of the power supply can vary during the experiment but the wire must be Ohmic and uniform.
- c. the wire must be Ohmic and uniform but the current in it does not have to be fixed during the experiment.
- d. the emf of the power supply is fixed and the wire is Ohmic and uniform.
- e. the emf of the power can vary during the experiment but the wire must be Ohmic, .uniform, and have a length of one meter.

Your answer is incorrect.

The correct answer is: the emf of the power supply is fixed and the wire is Ohmic and uniform.

Question 5

Not answered

Marked out of 2.50

Flag question

In the electric Field Mapping Experiment, which of the following is true in the first part?

a. If the galvanometer reads zero for a given position of the pointer and a given position of the sliding contact along the rheostat, then if the sliding contact is moved the galvanometer will not read zero.

b. If the sliding contact along the rheostat is kept at the same position there is only one position of the pointer between the two electrodes for which the galvanometer reads zero.

c. The galvanometer measures the electric field between the anode and the cathode.

d. The galvanometer is used to find points between the two electrodes that are at the same potential as the anode.

e. The galvanometer reads the potential difference between the pointer and the cathode.

Your answer is incorrect.

The correct answer is: If the galvanometer reads zero for a given position of the pointer and a given position of the sliding contact along the rheostat, then if the sliding contact is moved the galvanometer will not read zero.

Question 6

Not answered

Marked out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true?

a. The power generated by the battery does not depend on the load resistance.

b. The power generated by the battery during the experiment is fixed.

c. The current in the circuit is maximum when the load resistance is maximum.

d. When $R_L = R_s$ the current in the circuit is maximum.

e. The power generated by the battery varies with the load resistance.

Your answer is incorrect.

The correct answer is:
The power generated by the battery varies with the load resistance.

Question 7

Not answered

Marked out of 2.50

Flag question

During the Wheatstone Bridge experiment, when the pointer is at the balance point then:

a. The potential difference across the unknown resistance is equal to the potential difference across known resistance.

b. The potential difference across the known resistance is equal to the potential difference between the balance point and the point of contact between the known and unknown resistances.

c. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

d. The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

e. The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance.

Your answer is incorrect.

The correct answer is:
The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

Question 8

Not answered

Marked out of 2.50

Flag question

If you have several wires made from different Ohmic materials with different lengths L, different radii r, and different resistivities ρ, and you perform an experiment in which you connect wires in series with a power supply with a variable emf and measure the current I and the potential difference V across the wires. Then you obtains a linear relation between:

a. the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from the same material.

b. the potential V and the current I a variable emf of the power supply and wires of equal radius and length but made from different materials.

c. the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from different materials.

d. the current and the length of the wire using a power supply with a fixed emf and wires from the same material with equal radius.

e. V and I using wires with equal length and made from different materials.

Your answer is incorrect.

The correct answer is:
the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from the same material.

Question 1

Incorrect

Mark 0.00 out of 2.50

Flag question

In the Potentiometer experiment, in order to obtain the linear relation in the calibration the following has to be satisfied:

a. the emf of the power can vary during the experiment but the wire must be Ohmic, .uniform, and have a length of one meter.

b. the emf of the power supply can vary during the experiment but the wire must be Ohmic and uniform.

c. the emf of the power supply is fixed and the wire is Ohmic and uniform.

d. The potential difference across the wire cannot depend on the resistivity of the wire.

e. the wire must be Ohmic and uniform but the current in it does not have to be fixed during the experiment. ✖

Your answer is incorrect.

The correct answer is: the emf of the power supply is fixed and the wire is Ohmic and uniform.

Question 2

Not answered

Marked out of 2.50

Flag question

If you have several wires made from different Ohmic materials with different lengths L, different radii r, and different resistivities ρ, and you perform an experiment in which you connect wires in series with a power supply with a variable emf and measure the current I and the potential difference V across the wires. Then you obtains a linear relation between:

a. V and I using wires with equal length and made from different materials.

b. the current and the length of the wire using a power supply with a fixed emf and wires from the same material with equal radius.

c. the potential V and the current I a variable emf of the power supply and wires of equal radius and length but made from different materials.

d. the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from the same material.

e. the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from different materials.

Your answer is incorrect.

The correct answer is:
the current and the inverse of wire length, using a fixed emf of the power supply and wires of equal radius made from the same material.

Question 3

Not answered

Marked out of 2.50

Flag question

You have done the Wheatstone Bridge experiment using a power supply with emf V_0 and a wire of length L and resistivity ρ and determined the balance point for unknown resistance R_x, known resistance R_s, Which of the following will keep fixed the ratio of L_2/L_1?

- a. Changing the known resistance and fixing everything else.
- b. Changing the unknown resistance and keeping everything else the same.
- c. Varying the length or resistivity of the wire and keeping everything else the same.
- d. Changing the resistivity of the wire and keeping everything else the same.
- e. Changing emf of the power supply and keeping everything else the same.

Your answer is incorrect.

The correct answer is:
Varying the length or resistivity of the wire and keeping everything else the same.

Question **4**

Not answered

Marked out of 2.50

Flag question

Suppose we connect a non-Ohmic resistance R_1 and an Ohmic resistance $R_2 > R_1$ in series in a circuit, which of the following is true?

- a. The slope of the total potential difference across the two resistances vs. the current in R_2 is $R_1 + R_2$.
- b. The potential difference across R_1 is smaller than the potential difference across R_2.
- c. There is a linear relation between the total resistance and the current in R_2.
- d. The potential difference across R_1 is greater than the potential difference across R_2.
- e. The current in R_2 is greater than the current in R_1.

Your answer is incorrect.

The correct answer is:
The potential difference across R_1 is smaller than the potential difference across R_2.

Question 5

Not answered

Marked out of 2.50

Flag question

In the Electric Field Mapping experiment, suppose you used a given power supply with emf V_0 Volt and put the electrode separation at L cm. Then you measure V for points along a straight line perpendicular to the electrodes, joining the centers of the positive and negative electrodes. You connect the positive terminal of the voltmeter to the anode and the negative terminal to the pointer placed at a point in the tray along the line joining the two electrodes, a distance d from the anode. Which of the following is true?

- a. The slope of V vs. d is negative.
- b. The positive terminal of the voltmeter should be connected to the cathode and the negative terminal to the point between the two electrodes.
- c. The slope of V vs. d depends on V_0 only.
- d. There is a linear relation between V_0 and d.
- e. The slope of V vs d is determined by V_0 and L.

Your answer is incorrect.

The correct answer is:
The slope of V vs d is determined by V_0 and L.

Question 6

Not answered

Marked out of 2.50

Flag question

In the electric Field Mapping Experiment, which of the following is true in the first part?

a. If the sliding contact along the rheostat is kept at the same position there is only one position of the pointer between the two electrodes for which the galvanometer reads zero.

b. Suppose we find a point between the two electrodes for a given position of the sliding contact along the rheostat for which the galvanometer reads zero.
If we move the sliding contact while keeping the pointer at the same position the galvanometer will not read zero.

c. The galvanometer measures the electric field between the anode and the cathode.

d. The galvanometer reads the potential of the position of the pointer.

e. The galvanometer is used to find points between the two electrodes that are at the same potential as the anode.

Your answer is incorrect.

The correct answer is: Suppose we find a point between the two electrodes for a given position of the sliding contact along the rheostat for which the galvanometer reads zero.
If we move the sliding contact while keeping the pointer at the same position the galvanometer will not read zero.

Question 7

Not answered

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Flag question

During the Wheatstone Bridge experiment, when the pointer is at the balance point then:

a. The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the unknown resistance.

b. The potential difference across the known resistance is equal to the potential difference between the balance point and the point of contact between the known and unknown resistances.

c. The potential difference across the unknown resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

d. The potential difference across the unknown resistance is equal to the potential difference across known resistance.

e. The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

Your answer is incorrect.

The correct answer is:
The potential difference across the known resistance is equal to the potential difference between the balance point and the end of the wire connected to the known resistance.

Question 8

Not answered

Marked out of 2.50

Flag question

In the Power Transfer experiment, which of the following is true?

a. The power generated by the battery during the experiment is constant.

b. When the load and internal resistances are equal the power dissipated in them are equal.

c. The maximum current in the circuit is when the load resistance is equal to the internal resistance.

d. The power generated by the battery does not depend on the load resistance.

e. When load and internal resistances are the same the current and power in the circuit are maximum.

Your answer is incorrect.

The correct answer is:
When the load and internal resistances are equal the power dissipated in them are equal.