

# CASTLE Test Review

⚠ This is a preview of the published version of the quiz

Started: May 1 at 8:02am

## Quiz Instructions

Test Review

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### Question 1

1 pts

How does the current (aka 'flow rate of charge') in a parallel circuit divide?

- if the resistors are not equal, more charge flows to the higher resistor's branch
- none of these
- if the resistors on each branch are not identical, more charge flows through lowest resistance branch
- always equally

### Question 2

1 pts

Two different circuits have two identical resistors and an identical battery, but one is configured as parallel while the other is series. Which will have the greatest charge flow rate through the battery?

- series
- equal flow rate for both
- parallel

### Question 3

1 pts

Two different circuits have two identical resistors and an identical battery, but one is configured as parallel while the other is series. Which will have the greatest equivalent resistance?

- parallel
- series
- they have the same equivalent resistance

**Question 4****1 pts**

A battery supplies a constant current to a circuit regardless of the circuit's resistance.

- True
- False

**Question 5****1 pts**

For the life of a battery, it supplies a nearly constant electric pressure difference to a circuit when connected.

- True
- False

**Question 6****1 pts**

When resistors are in series, a difference in electrical pressure (aka Voltage) across resistors with varying levels of resistance is necessary to produce a constant charge flow rate (aka Current).

- True
- 
- False

**Question 7****1 pts**

Adding a wire in parallel to a bulb results in a 'short circuiting' of the bulb and it will not light.

- True
- 
- False

**Question 8****1 pts**

When two bulbs of unequal resistance are placed in series, the flow rate through the bulbs are \_\_\_\_\_.

- impossible to know
- 
- unequal
- 
- equal

**Question 9****1 pts**

When two bulbs of unequal resistance are placed in series, the electrical pressure (voltage drop) across the bulbs are \_\_\_\_\_.

- impossible to know
- 
- unequal
- 
- equal

**Question 10****1 pts**

When two bulbs of unequal resistance are placed in series, the bulb with \_\_\_\_\_ resistance is brighter.

- higher
- lower

**Question 11****1 pts**

When two bulbs of unequal resistance are placed in series, if one bulb lights but the other one does not, the one that does not light is not producing any heat or light.

- True
- False

**Question 12****1 pts**

If a bulb burns out that is placed in series with other bulbs in a circuit, the other bulbs will still light up.

- True
- False

**Question 13****1 pts**

Voltmeters should always be connected in parallel.

True False**Question 14****1 pts**

Ammeters should be placed in series.

 True False**Question 15****1 pts**

Ammeters should have essentially zero resistance while voltmeters should have infinite resistance.

 True False**Question 16****1 pts**

The battery to which it is connected and the maximum capacity of the capacitor determine the charge held by the capacitor.

 True False**Question 17****1 pts**

Conventional current flow is from the positive terminal of the battery to the negative.

- True
- False

**Question 18****1 pts**

Two batteries, a bulb and a capacitor comprise a closed loop circuit; assume the capacitor is fully charged by the two batteries. If an additional battery is added to the circuit such that there are three in a closed loop circuit, the bulb will \_\_\_\_\_.

- light briefly then dim until the capacitor increases its voltage to match the batteries..
- begin dimly lit and increase in brightness until the capacitor's voltage matches that of the batteries.
- not light
- light dimly at a constant brightness indefinitely

**Question 19****1 pts**

Two batteries, a bulb and a capacitor comprise a closed loop circuit; assume the capacitor is fully charged by the two batteries. If one of the batteries is removed such that there is one in the closed loop circuit, the bulb will \_\_\_\_\_.

- light briefly then dim until the capacitor decreases its voltage to match the one battery.
- light dimly at a constant brightness indefinitely.
- light briefly then dim until the capacitor increases its voltage to match the one battery.
- not light
- begin dimly lit and increase in brightness until the capacitor's voltage matches that of the battery.

**Question 20****1 pts**

Conductors allow electrons to easily flow.

- True
- False

**Question 21****1 pts**

In order for a light bulb to light, there must be current flowing through its filament. The jacket and the tip are portals for electrons to flow in or out of the filament.

- True
- False

**Question 22****1 pts**

The jacket of a light bulb can either act as the in or out port for electrons to flow.

- True
- False

**Question 23****1 pts**

The charge flow rate is different for two bulbs in series.

True False**Question 24****1 pts**

The charge flow rate through two bulbs in series but with differing resistance is the same.

 True False**Question 25****1 pts**

The voltage drop (aka electrical pressure) across individual bulbs in series but with differing resistances is the same.

 True False**Question 26****1 pts**

When two bulbs are in series, charge gets used up by the first bulb before reaching the second.

 True False**Question 27****1 pts**



A battery may not be the only source of voltage (aka electric pressure) for a circuit. A generator can also supply voltage.

- True
- False

**Question 28****1 pts**

When two bulbs are in series and are initially connected to the battery, the one closest to the positive terminal lights first.

- True
- False

**Question 29****1 pts**

Two bulbs in series with differing resistances require the same voltage drop (aka electric pressure) in order to light.

- True
- False

**Question 30****1 pts**

A capacitor's voltage (aka electrical pressure) does not depend on the battery to which it is connected.

- True
- False

**Question 31****1 pts**

A capacitor stops charging when the compression or pressure of the charge in its positive plate raises to that of the battery's positive terminal.

- True
- False

**Question 32****1 pts**

The direction of charge flow (aka Current) changes when a capacitor is charging compared to when it is discharging.

- True
- False

**Question 33****1 pts**

A single long bulb is connected to a fresh battery. When a second long bulb is added in parallel to the battery, the voltage (aka electrical pressure) across the battery terminals

\_\_\_\_\_.

- increases
- does not change
- decreases

**Question 34****1 pts**

A single long bulb is connected to a fresh battery. When a second long bulb is added in parallel to the battery, the voltage (aka electrical pressure) across the first bulb

\_\_\_\_\_.

- increases
- decreases
- does not change

### Question 35

1 pts

A single long bulb is connected to a fresh battery. When a second long bulb is added in parallel to the battery, the charge flow rate (aka Current) through the battery

\_\_\_\_\_.

- does not change
- increases
- decreases

### Question 36

1 pts

A single long bulb is connected to a fresh battery. When a second long bulb is added in parallel to the battery, the charge flow rate (aka Current) through the first bulb

\_\_\_\_\_.

- does not change
- decreases
- increases

**Question 37****1 pts**

The voltage (electrical pressure) across a capacitor remains constant while it is charging.

- True
- False

**Question 38****1 pts**

The voltage of a battery which is charging a capacitor remains constant as the capacitor is charging.

- True
- False

**Question 39****1 pts**

A capacitor, bulb, and battery comprise a circuit. Assume the capacitor is fully charged. The voltage drop across the bulb is the same as the drop across the capacitor.

- True
- False

**Question 40****1 pts**

A capacitor, bulb, and battery comprise a circuit. Assume the capacitor is fully charged. The voltage drop across the bulb is the same as the drop across the battery.

- True

False

**Question 41****1 pts**

A capacitor, bulb, and battery comprise a circuit. Assume the capacitor is fully charged. There is no voltage drop across the bulb.

True

False

**Question 42****1 pts**

A capacitor, bulb, and battery are connected in a circuit. Assume the capacitor is not yet charged. Initially, the voltage drop across the bulb is much greater than the voltage across the capacitor.

True

False

Saving...

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