

Q1.1 What are the characteristics of the following?

- 1.1.1 The **resistor** is a passive component that opposes the flow of current through it.
- 1.1.2 The **inductor** is a passive component that stores energy in a magnetic field.
- 1.1.3 The **capacitor** is a passive component that stores energy in an electric field.
- 1.1.4 The **diode** is a semiconductor device that allows current to flow in one direction only.
- 1.1.5 The **transistor** is a semiconductor device that can amplify or switch electronic signals.
- 1.1.6 The **integrated circuit (IC)** is a semiconductor device that contains multiple transistors and other components on a single chip.
- 1.1.7 The **optical diode** is a semiconductor device that emits light when current flows through it.
- 1.1.8 The **optical transistor** is a semiconductor device that can amplify or switch light signals.

Q1.2 What are the characteristics of the following?

- 1.2.1 **AC** (Alternating Current) is a type of current that periodically reverses direction.
- 1.2.2 **DC** (Direct Current) is a type of current that flows in only one direction.

Q1.3 What are the characteristics of the following?

- 1.3.1 **Series circuit**: The current is the same through all components, and the total voltage is the sum of the voltages across each component.
- 1.3.2 **Parallel circuit**: The voltage is the same across all components, and the total current is the sum of the currents through each component.
- 1.3.3 **Series-parallel circuit**: A combination of series and parallel connections.
- 1.3.4 **Parallel-series circuit**: A combination of parallel and series connections.

Q1.4 What are the characteristics of the following?

- 1.4.1 **Resistor**: Opposes the flow of current.
- 1.4.2 **Inductor**: Stores energy in a magnetic field.
- 1.4.3 **Capacitor**: Stores energy in an electric field.

Q1.5 What are the characteristics of the following?

- 1.5.1 **AC** (Alternating Current): Current that periodically reverses direction.
- 1.5.2 **DC** (Direct Current): Current that flows in only one direction.
- 1.5.3 **AC voltage**: Voltage that periodically reverses direction.
- 1.5.4 **DC voltage**: Voltage that is constant in magnitude and direction.

Q1.6 What are the characteristics of the following?

- 1.6.1 **Resistor**: Opposes the flow of current.
- 1.6.2 **Inductor**: Stores energy in a magnetic field.
- 1.6.3 **Capacitor**: Stores energy in an electric field.

Q1.7 What are the characteristics of the following?

- 1.7.1 **Series circuit**: The current is the same through all components.
- 1.7.2 **Parallel circuit**: The voltage is the same across all components.
- 1.7.3 **Series-parallel circuit**: A combination of series and parallel connections.
- 1.7.4 **Parallel-series circuit**: A combination of parallel and series connections.

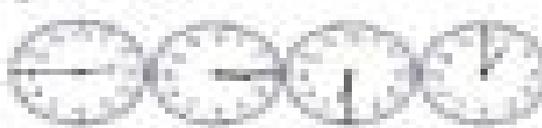
Q1.8 What are the characteristics of the following?

- 1.8.1 **Resistor**: Opposes the flow of current.
- 1.8.2 **Inductor**: Stores energy in a magnetic field.
- 1.8.3 **Capacitor**: Stores energy in an electric field.

Q1.9 What are the characteristics of the following?

- 1.9.1 **Resistor**: Opposes the flow of current.
- 1.9.2 **Inductor**: Stores energy in a magnetic field.
- 1.9.3 **Capacitor**: Stores energy in an electric field.

Q2.1 What are the following?



Q2.2 What are the following?

- 2.2.1 **Resistor**: Opposes the flow of current.
- 2.2.2 **Inductor**: Stores energy in a magnetic field.
- 2.2.3 **Capacitor**: Stores energy in an electric field.
- 2.2.4 **Diode**: Allows current to flow in one direction only.
- 2.2.5 **Transistor**: Amplifies or switches electronic signals.
- 2.2.6 **IC (Integrated Circuit)**: Contains multiple transistors and other components on a single chip.
- 2.2.7 **Optical diode**: Emits light when current flows through it.
- 2.2.8 **Optical transistor**: Amplifies or switches light signals.

Q2.3 What are the following?

- 2.3.1 **AC** (Alternating Current): Current that periodically reverses direction.
- 2.3.2 **DC** (Direct Current): Current that flows in only one direction.
- 2.3.3 **AC voltage**: Voltage that periodically reverses direction.
- 2.3.4 **DC voltage**: Voltage that is constant in magnitude and direction.

Q2.4 What are the characteristics of the following?

- 2.4.1 **Resistor**: Opposes the flow of current.
- 2.4.2 **Inductor**: Stores energy in a magnetic field.
- 2.4.3 **Capacitor**: Stores energy in an electric field.

Q2.5 What are the characteristics of the following?

- 2.5.1 **AC** (Alternating Current): Current that periodically reverses direction.
- 2.5.2 **DC** (Direct Current): Current that flows in only one direction.

AC	DC	AC
DC	AC	DC

Q2.6 What are the characteristics of the following?

- 2.6.1 **Resistor**: Opposes the flow of current.
- 2.6.2 **Inductor**: Stores energy in a magnetic field.
- 2.6.3 **Capacitor**: Stores energy in an electric field.