

1. What is the function of electrostatic focusing in a cathode ray tube (CRT)?

- A. To generate the electron beam
- B. To control the intensity of the electron beam
- C. To converge the electron beam onto a small spot on the screen
- D. To deflect the electron beam horizontally

Answer: C

Explanation: Electrostatic focusing in a CRT is responsible for converging the electron beam onto a small spot on the screen, ensuring sharpness and clarity of the displayed image.

2. Which component of a cathode ray tube (CRT) is responsible for deflecting the electron beam vertically and horizontally?

- A. Electrostatic focusing
- B. Post deflection acceleration
- C. Graticules
- D. Electrostatic deflection

Answer: D

Explanation: Electrostatic deflection in a CRT is responsible for deflecting the electron beam vertically and horizontally to create the desired images or waveforms on the screen.

3. What is the purpose of post deflection acceleration in a cathode ray tube (CRT)?

- A. To increase the brightness of the displayed image
- B. To control the intensity of the electron beam
- C. To deflect the electron beam horizontally

D. To accelerate the electron beam towards the screen

Answer: D

Explanation: Post deflection acceleration in a CRT is used to accelerate the electron beam towards the screen after it has been deflected by the deflection plates, ensuring uniform brightness across the entire screen.

4. In an oscilloscope, what is the function of the time base circuit?

- A. To control the intensity of the electron beam
- B. To provide a stable horizontal deflection signal
- C. To generate the electron beam
- D. To deflect the electron beam vertically

Answer: B

Explanation: The time base circuit in an oscilloscope provides a stable horizontal deflection signal, which controls the timing and positioning of the waveform displayed on the screen.

5. Which type of oscilloscope probe is commonly used for high-frequency measurements?

- A. Passive probe
- B. Active probe
- C. Current probe
- D. Differential probe

Answer: B

Explanation: Active probes are commonly used for high-frequency measurements in oscilloscopes due to their ability to amplify and maintain signal integrity over a wide

frequency range.

6. What is the main application of a dual trace oscilloscope?

- A. Frequency measurement
- B. Phase measurement
- C. Simultaneous observation of two waveforms
- D. Voltage measurement

Answer: C

Explanation: The main application of a dual trace oscilloscope is the simultaneous observation of two waveforms, allowing for comparisons and analysis of their characteristics.

7. Which bridge configuration is used for measuring inductance and capacitance simultaneously?

- A. Maxwell's bridge
- B. Hay's bridge
- C. Schering bridge
- D. Wien bridge

Answer: A

Explanation: Maxwell's bridge configuration is used for measuring both inductance and capacitance simultaneously, providing a convenient method for determining their values accurately.

8. What is the purpose of a Q-meter in impedance measurement?

- A. To measure the quality factor (Q) of a component
- B. To measure the phase angle of the impedance
- C. To measure the resistance of a component
- D. To measure the inductance of a component

Answer: A

Explanation: A Q-meter is used to measure the quality factor (Q) of a component, which indicates its efficiency and performance in a circuit.

9. Which special purpose oscilloscope is used for capturing and displaying transient events?
- A. Multi-input oscilloscope
 - B. Sampling oscilloscope
 - C. Storage oscilloscope
 - D. Dual beam oscilloscope

Answer: B

Explanation: A sampling oscilloscope is specifically designed for capturing and displaying transient events by taking samples of the input signal at high speeds.

10. In a CRT, what is the function of the screen?
- A. To generate the electron beam
 - B. To accelerate the electron beam towards the screen
 - C. To provide a surface for displaying images
 - D. To deflect the electron beam vertically

Answer: C

Explanation: The screen in a CRT provides a surface for displaying images or waveforms generated by the electron beam, allowing for visual observation or measurement.

11. What is the primary function of a Wein bridge in electronic circuitry?

- A. Measurement of inductance
- B. Measurement of capacitance
- C. Generation of sinusoidal signals
- D. Amplification of audio signals

Answer: C

Explanation: The primary function of a Wein bridge circuit is the generation of sinusoidal signals at a specific frequency, typically used in audio applications and signal generation.

12. Which type of oscilloscope is specifically designed for capturing and storing waveform data for later analysis?

- A. Multi-input oscilloscope
- B. Sampling oscilloscope
- C. Storage oscilloscope
- D. Dual beam oscilloscope

Answer: C

Explanation: A storage oscilloscope is specifically designed for capturing and storing waveform data for later analysis, allowing users to review and analyze signals even after they have occurred.

13. What is the purpose of a graticule in an oscilloscope?

- A. To control the intensity of the electron beam
- B. To provide a reference grid for measurements
- C. To generate the electron beam
- D. To deflect the electron beam horizontally

Answer: B

Explanation: A graticule in an oscilloscope provides a reference grid on the screen, enabling users to make accurate measurements of waveform parameters such as voltage, time, and frequency.

14. Which bridge configuration is commonly used for measuring the relative permittivity of dielectric materials?

- A. Maxwell's bridge
- B. Hay's bridge
- C. Schering bridge
- D. Wien bridge

Answer: C

Explanation: The Schering bridge configuration is commonly used for measuring the relative permittivity (dielectric constant) of materials, particularly insulating or dielectric materials.

15. What is the primary advantage of a dual beam oscilloscope over a single beam oscilloscope?

- A. Simultaneous observation of two waveforms
- B. Higher frequency range
- C. Enhanced resolution

D. Greater accuracy

Answer: A

Explanation: The primary advantage of a dual beam oscilloscope is the ability to simultaneously observe and compare two different waveforms, making it easier to analyze and troubleshoot complex circuits.

16. In which type of bridge configuration is a standard resistor used as a reference element?

- A. Maxwell's bridge
- B. Hay's bridge
- C. Schering bridge
- D. Wien bridge

Answer: B

Explanation: In Hay's bridge configuration, a standard resistor is used as a reference element for measuring unknown resistances or impedances accurately.

17. What is the primary purpose of a multi-input oscilloscope?

- A. Simultaneous observation of multiple signals
- B. Enhanced frequency measurement accuracy
- C. Higher resolution waveform display
- D. Measurement of phase difference

Answer: A

Explanation: The primary purpose of a multi-input oscilloscope is the simultaneous observation of multiple signals, allowing users to compare and analyze different waveforms

simultaneously.

18. Which type of oscilloscope probe is suitable for measuring current flowing through a circuit?

- A. Passive probe
- B. Active probe
- C. Current probe
- D. Differential probe

Answer: C

Explanation: A current probe is specifically designed for measuring current flowing through a circuit, providing a non-intrusive method for current measurement without breaking the circuit.

19. What is the primary application of a sampling oscilloscope?

- A. Voltage measurement
- B. Frequency measurement
- C. Time-domain waveform analysis
- D. Phase measurement

Answer: C

Explanation: The primary application of a sampling oscilloscope is time-domain waveform analysis, particularly for capturing and displaying transient events or high-frequency signals.

20. Which type of bridge configuration is commonly used for precise measurement of inductance?

- A. Maxwell's bridge
- B. Hay's bridge
- C. Schering bridge
- D. Wien bridge

Answer: A

Explanation: Maxwell's bridge configuration is commonly used for precise measurement of inductance, providing accurate results for inductor characterization and circuit analysis.