Automotive Electrical and Engine Performance 9th Edition
Chapter 6 – Digital Storage Oscilloscopes (DSOs)
Multiple Choice Questions Quiz A

1. What is one key advantage of using a digital storage oscilloscope (DSO) in automotive diagnostics?

a) It continuously displays waveforms without storing them

b) It allows the capture and playback of intermittent faults

c) It operates only with analog signals

d) It requires a CRT display for proper functionality

2. When setting the time base of an oscilloscope to 10 ms/div, the total time displayed on a 10-division screen will be:

a) 100 ms

b) 10 ms

c) 1,000 ms

d) 50 ms

3. In DC coupling mode, what will an oscilloscope display when analyzing a mixed AC/DC signal?

a) Only the DC portion of the signal

b) Only the AC portion of the signal

c) Both AC and DC components on the same display

d) The AC component at zero volts

4. Which of the following settings on an oscilloscope would allow only the AC portion of a signal to be displayed?

a) DC coupling

b) AC coupling

c) Pulse width modulation

d) External trigger

5. Technician A says that adjusting the volts per division (V/div) allows viewing of the entire waveform within the oscilloscope screen range. Technician B says that the volts per division setting determines the horizontal scale on the oscilloscope. Who is correct?

a) Technician A only

b) Technician B only

c) Both Technician A and Technician B

d) Neither Technician A nor Technician B

6. What is the primary purpose of an external trigger on an oscilloscope?

a) To initiate the display of a waveform from an external signal

b) To adjust the frequency of an observed signal

c) To filter out DC voltage signals

d) To increase the amplitude of the observed waveform

7. Which oscilloscope feature measures the percentage of time a signal is “on” during each cycle?

a) Frequency

b) Duty cycle

c) Pulse width

d) Trigger level

8. In an oscilloscope, what term refers to the time a signal remains in the “on” state and is typically measured in milliseconds?

a) Frequency

b) Duty cycle

c) Pulse width

d) Trigger slope

9. Which component would a current clamp typically measure without disconnecting the circuit?

a) Frequency of voltage signals

b) AC or DC current flow

c) Pulse width modulation

d) Trigger level of a signal

10. When diagnosing an engine sensor signal that intermittently drops to zero volts, what is likely indicated by a vertical line on the oscilloscope trace?

a) An increase in duty cycle

b) A short circuit

c) A ground signal

d) An open circuit

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Answer Key Quiz A

Correct Answers:

1. b
2. a
3. c
4. b
5. a
6. a
7. b
8. c
9. b
10. d