Automotive Engine Performance, 5th Edition
Quiz 22A

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Technician A says that a heavy engine load results in high intake manifold vacuum and a high MAP sensor signal voltage. Technician B says that a MAP sensor uses a perfect vacuum (zero absolute pressure) in the sensor to determine the pressure. Which technician is correct? 1) _____
A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician

2) Most MAP sensors produce what type of output signal? 2) _____
A) Frequency (Hz)
B) AC voltage (AC V)
C) Analog DC voltage (DC V)
D) DC milliamperes (DC mA)

3) The MAP sensor is used to check the operation of the _____ on OBD II vehicles. 3) _____
A) TP sensor
B) EGR system
C) Backup system
D) Main system

4) A MAP sensor is being tested. Technician A says that many MAP sensors also act as a barometric pressure sensor when the ignition switch is first turned on. Technician B says that on many MAP sensors the signal voltage should increase when the vacuum at the sensor decreases. Which technician is correct? 4) _____
A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician

5) Technician A says that pressure below atmospheric pressure is called vacuum and is measured in inches of Mercury (Hg). Technician B says that a manifold absolute pressure (MAP) sensor uses a low vacuum in the sensor to determine the pressure. Which technician is correct? 5) _____
A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician

6) Which design of MAP sensor produces a frequency (digital) output signal? 6) _____
A) Silicon–diaphragm strain gauge
B) Piezoresistivity design
C) Capacitor–capsule
D) Ceramic disc

7) Which statement is false? 7) _____

A) Absolute pressure is equal to barometric pressure plus intake manifold vacuum
B) A decrease in manifold vacuum means an increase in manifold pressure
C) The MAP sensor compares manifold vacuum to a perfect vacuum
D) Barometric pressure minus the MAP sensor reading equals intake manifold vacuum

8) Two technicians are discussing testing MAP sensors. Technician A says that the MAP sensor should be replaced if water comes out of the sensor when the vacuum hose is removed from the sensor. Technician B says that the injector pulse width should increase when vacuum to the MAP sensor is increased. Which technician is correct? 8) _____

A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician

9) The MAP and BARO sensor may be the same sensor. 9) _____

A) True
B) False

10) When testing a MAP sensor that produces an analog voltage signal, the sensor signal is l.4 volts with 18 in. hg. applied to the sensor. When 13 in. hg. is supplied to the sensor, the sensor signal should be _____ volts? 10) _____

A) 1.4
B) 1.6
C) 2.6
D) 2.3

Answer Key
Testname: ENGINEPERF5_22A

1) C
Page Ref: 354-355
2) C
Page Ref: 354
3) B
Page Ref: 357
4) C
Page Ref: 358
5) A
Page Ref: 354
6) C
Page Ref: 355
7) A
Page Ref: 353
8) A
Page Ref: 360
9) A
Page Ref: 358
10) D
Page Ref: 357