

Name _____

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

- 1) Technician A says that a wide-band oxygen sensor, also called a lean air-fuel (LAF) sensor, can detect air-fuel ratios from as rich as 10:1 to as lean as 23:1. Technician B says that the oxygen sensor signal determines fuel trim which is used to tailor the air-fuel mixture for the catalytic converter. Which technician is correct? 1) _____
A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician
- 2) An oxygen sensor is being tested using a digital storage oscilloscope (DSO). A good oxygen sensor should display how many transitions (switches) per second? 2) _____
A) 1-5
B) 5-10
C) 10-15
D) 15-20
- 3) In some hybrid electric vehicles, the wide band oxygen sensor can cause the PCM to enter closed loop _____ 3) _____
A) As soon as the engine (ICE) starts
B) Within 10 seconds of engine (ICE) start-up
C) By the time the vehicle reaches 60 mph
D) Within 2 minutes
- 4) When the air / fuel ratio is expressed as lambda, a lambda number of less than 1 indicates a(n) _____ exhaust. 4) _____
A) Rich
B) Lean
C) Excessively cold
D) Excessively hot
- 5) The voltage output of a zirconia oxygen sensor when the exhaust stream is lean (excess oxygen) is _____. 5) _____
A) Relatively high (close to 1 volt)
B) About in the middle of the voltage range
C) Relatively low (close to 0 volt)
D) Either A or B, depending on atmospheric pressure
- 6) The two internal chambers of a dual cell wide band oxygen sensor include _____ and _____ 6) _____
A) Single; dual
B) Nernst; Pump
C) Air reference; diffusion
D) Inside; outside

- 7) A high O_2S voltage could be due to a _____. 7) _____
- A) rich exhaust
 - B) lean exhaust
 - C) defective spark plug wire
 - D) Both A and C
- 8) When the concentration of oxygen on the exhaust side of the thimble is low (rich exhaust), a voltage of _____ is generated between the electrodes. 8) _____
- A) 0.25–0.50
 - B) 0.60–1.0
 - C) 1.0–2.0
 - D) 10–20
- 9) A P0132 DTC is being discussed. Technician A says that a defective HO_2S could be the cause. Technician B says that an HO_2S signal wire shorted-to-ground could be the cause. Which technician is correct? 9) _____
- A) Technician A only
 - B) Technician B only
 - C) Both technicians
 - D) Neither technician
- 10) A heated Zirconia oxygen sensor will have how many wires? 10) _____
- A) 2
 - B) 3
 - C) 4
 - D) Either B or C

Answer Key

Testname: AEEP8_35A

1) C

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2) A

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3) A

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4) A

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5) C

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6) C

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7) A

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8) B

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9) A

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10) D

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