

Electric and Hybrid Electric Vehicles, 1st Edition

Quiz 11A

NAME _____

1. _____ are used to smooth DC ripple in the inverter. 1. _____
 - A) Boost converters
 - B) Capacitors
 - C) SMRs
 - D) IGBTs

2. Snubbers are also called _____ diodes. 2. _____
 - A) flyback
 - B) freewheeling
 - C) suppressor, or catch
 - D) Any of the above

3. Which of these is an advantage of using an electric motor to propel a vehicle? 3. _____
 - A) Constant RPM
 - B) High torque at low RPM
 - C) No torque noise
 - D) Heavy weight

4. What supplies the 12 volts needed to operate the accessories in a hybrid electric or electric vehicle? 4. _____
 - A) An alternator driven by an electric motor
 - B) A DC-DC converter
 - C) An inverter
 - D) Either a or c, depending on the vehicle

5. The speed of a DC motor is proportional to the _____ and the torque is proportional to the _____. 5. _____
 - A) voltage; current
 - B) current; voltage
 - C) resistance; amperage
 - D) current; frequency

6. Electric motor power is expressed in _____. 6. _____
 - A) horsepower
 - B) kilowatts
 - C) kWh
 - D) amperes

7. With the vehicle in the ready mode the _____ should be able to maintain a system voltage of 14.0 volts to the 12-volt auxiliary battery. 7. _____
 - A) inverter
 - B) alternator
 - C) DC to DC converter
 - D) Any of the above

8. A P0A04 DTC is what type of trouble code? 8. _____
- A) Global (generic)
 - B) Vehicle manufacturer specific
 - C) Enhanced scan tool
 - D) Any of the above
9. Technician A says that most EVs use permanent magnet AC motors. Technician B says that EVs use frequency to control AC motor speed. Which technician is correct? 9. _____
- A) Technician A only
 - B) Technician B only
 - C) Both technicians A and B
 - D) Neither technician A nor B
10. DC motors use _____ which may cause electrical noise in the vehicle. 10. _____
- A) brushes
 - B) bearings
 - C) magnets
 - D) windings

Answer Key

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1. B
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3. B
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4. B
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5. A
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6. B
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7. C
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8. A
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10. A
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