

Name \_\_\_\_\_

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

- 1) Which starting system component uses a small amount of current to control a large amount of current? 1) \_\_\_\_\_
  - A) Starter solenoid or relay
  - B) Starter brushes
  - C) Starter drive
  - D) Neutral safety switch
  
- 2) Permanent magnets are commonly used for what part of the starter? 2) \_\_\_\_\_
  - A) The armature
  - B) The solenoid
  - C) The field coils
  - D) The commutator
  
- 3) On computer-controlled starting, some key-operated ignition systems and most push-button-to-start systems the computer (PCM) is used to crank the engine. The ignition switch start position or the push-to-start button is used as an input signal to the \_\_\_\_\_. 3) \_\_\_\_\_
  - A) Starter solenoid
  - B) Starter relay
  - C) PCM
  - D) Starter motor
  
- 4) Series-wound electric motors \_\_\_\_\_. 4) \_\_\_\_\_
  - A) Produce electrical power
  - B) Produce maximum power at 0 RPM
  - C) Produce maximum power at high RPM
  - D) Use a shunt coil
  
- 5) Normal cranking speed of an engine is about \_\_\_\_\_. 5) \_\_\_\_\_
  - A) 2000 RPM
  - B) 1500 RPM
  - C) 1000 RPM
  - D) 200 RPM
  
- 6) How many brushes are typically used in the automotive starter? 6) \_\_\_\_\_
  - A) 4
  - B) 2
  - C) 8
  - D) None of these
  
- 7) A stop-start system includes what components? 7) \_\_\_\_\_
  - A) A special starter
  - B) An AGM or ELA battery
  - C) A switch to turn the system off in some vehicles
  - D) All of the above

- 8) Technician A says that a defective solenoid can cause a starter whine. Technician B says that a defective starter drive can cause a starter whining noise. Which technician is correct? 8) \_\_\_\_\_
- A) Technician A only
  - B) Technician B only
  - C) Both technicians
  - D) Neither technician
- 9) The engine will not start if \_\_\_\_\_. 9) \_\_\_\_\_
- A) The gear selector is in "D"
  - B) The gear selector is in "R"
  - C) The gear selector is in "L"
  - D) Any of the above
- 10) The instant the ignition switch is turned to the start position, \_\_\_\_\_. 10) \_\_\_\_\_
- A) The starter motor starts to rotate before energizing the starter pinion gear
  - B) The hold in winding is energized
  - C) The pull in winding is energized
  - D) Both the pull in winding and the hold in winding are energized

## Answer Key

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1) A

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2) C

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3) C

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4) B

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5) D

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6) A

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7) D

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8) B

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9) D

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10) D

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