

Name \_\_\_\_\_

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

- 1) Two types of superchargers include \_\_\_\_\_. 1) \_\_\_\_\_
  - A) Rotary and reciprocating
  - B) Roots-type and centrifugal
  - C) Double and single acting
  - D) Turbine and piston
  
- 2) When air is pumped into the cylinder, the combustion chamber receives an increase of air pressure known as \_\_\_\_\_ and is measured in pounds per square inch (psi), atmospheres (ATM), or bar. 2) \_\_\_\_\_
  - A) Density
  - B) Boost
  - C) Horsepower
  - D) Waste
  
- 3) Nitrous oxide injection adds \_\_\_\_\_ allowing the engine to burn more fuel. 3) \_\_\_\_\_
  - A) NO<sub>x</sub>
  - B) Oxygen
  - C) HC
  - D) CO<sub>2</sub>
  
- 4) Technician A says that a turbocharger uses the normally wasted heat energy of the exhaust to turn an impeller at high speed. Technician B says that there is only one type of supercharger, the roots-type. Which technician is correct? 4) \_\_\_\_\_
  - A) Technician A
  - B) Technician B
  - C) Both technicians
  - D) Neither technician
  
- 5) What service operation is *most* important on engines equipped with a turbocharger? 5) \_\_\_\_\_
  - A) Replacing the Air filter regularly
  - B) Replacing the fuel filter regularly
  - C) Regular oil changes
  - D) Regular exhaust system maintenance
  
- 6) Which forced induction component is driven by the engine crankshaft? 6) \_\_\_\_\_
  - A) Turbocharger
  - B) Intercooler
  - C) Turbine
  - D) Supercharger

- 7) The term "volumetric efficiency" refers to the ability of an engine to \_\_\_\_\_. 7) \_\_\_\_\_
- A) Create emissions
  - B) Create heat
  - C) Pull in air
  - D) Distribute air evenly
- 8) Technician A says that a wastegate is used on most turbocharger systems to limit and control boost pressures. Technician B says that a relief valve is also used to keep the speed of the turbine wheel from speeding up during engine deceleration. Which technician is correct? 8) \_\_\_\_\_
- A) Technician A
  - B) Technician B
  - C) Both technicians
  - D) Neither technician
- 9) Boost pressure is generally measured in \_\_\_\_\_. 9) \_\_\_\_\_
- A) Inches of mercury (in. Hg)
  - B) Pounds per square inch (PSI)
  - C) Inches of water (in. H<sub>2</sub>O)
  - D) Inch pounds
- 10) Many factory installed superchargers are equipped with a \_\_\_\_\_ that allows intake air to flow directly into the intake manifold without going through the supercharger. 10) \_\_\_\_\_
- A) Wastegate
  - B) Throttle control valve
  - C) Bypass valve
  - D) Control valve

## Answer Key

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1) B

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2) B

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3) B

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4) A

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5) C

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6) D

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7) C

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8) A

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9) B

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10) C

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