Automotive Engine Performance, 5th Edition
Quiz 12A

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) All of these are factors in calculating required airflow into an engine EXCEPT _____. 2) _____
A) Engine displacement
B) Engine speed (RPM)
C) Volumetric efficiency
D) Piston material

3) Technician A says that superchargers have a delay in their response called boost lag. Technician B says that turbochargers have a delay in response called turbo lag. Which technician is correct? 3) _____
A) Technician A only
B) Technician B only
C) Both technicians
D) Neither technician

4) Which of the following is essential to long turbocharger life? 4) _____
A) Maintaining a clean supply of engine oil.
B) Keep dirt particles and contamination out of intake and exhaust housings.
C) Flush the turbocharger unit when the engine is overhauled.
D) All of these are correct.

5) The following statements are all correct EXCEPT _____. 5) _____
A) The turbocharger drains power from the engine
B) Turbochargers help convert more engine heat energy into mechanical power
C) Turbochargers resemble centrifugal superchargers
D) Turbocharger bearings are usually lubricated with engine oil

6) Which of these is correct regarding volumetric efficiency? 6) _____
A) Volumetric efficiency is expressed as a percentage.
B) Engines have the same volumetric efficiency rating regardless of engine speed.
C) The most volumetric efficiency an engine could possibly have is 100%.
D) Naturally aspirated engines often achieve over 100% volumetric efficiency.

7) All of the following statements are correct EXCEPT _____. 7) _____
A) Supercharging often results in high emissions during deceleration and idle
B) Supercharging uses an air pump to force air into the combustion chamber
C) Supercharging allows for lower compression when the engine is not required to produce high power
D) Supercharging often removes hot exhaust gasses to lower the cylinder head temperature

8) A naturally aspirated engine depends on _____ to push the air-fuel mixture into the combustion chamber. 8) _____

A) Atmospheric pressure
B) Crankcase vacuum
C) Altitude
D) Radiator airflow

9) Which valve is used on a factory supercharger to limit boost? 9) _____

A) A bypass valve
B) A wastegate
C) A blow off valve
D) An air valve

10) What service operation is MOST important on engines equipped with a turbocharger? 10) _____

A) Replacing the air filter regularly
B) Replacing the fuel filter regularly
C) Regular oil changes
D) Regular exhaust system maintenance

Answer Key
Testname: ENGINEPERF5_12A

1) B
Page Ref: 192
2) D
Page Ref: 189
3) B
Page Ref: 195
4) D
Page Ref: 194
5) A
Page Ref: 193
6) A
Page Ref: 189
7) A
Page Ref: 190
8) A
Page Ref: 189
9) A
Page Ref: 192
10) C
Page Ref: 194