

Name \_\_\_\_\_

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

- 1) The head gasket has failed on this engine (circled area). The failure allowed \_\_\_\_\_ to leak into 1) \_\_\_\_\_ the combustion chamber.



- A) Engine oil  
B) Fuel  
C) Coolant  
D) Voltage
- 2) Which type of valve guide is most used in a cast-iron head? 2) \_\_\_\_\_  
A) Integral  
B) Bronze  
C) Powdered metal (PM)  
D) Thin-wall sleeve type
- 3) Technician A says that the only valve guide repair option for integral valve guides is to use oversize-stem valves. Technician B says that valve guides should be checked for wear using a ball gauge or a dial indicator. Which technician is correct? 3) \_\_\_\_\_  
A) Technician A  
B) Technician B  
C) Both technicians  
D) Neither technician

- 4) For lowest hydrocarbon emissions, which of these engine design features is used? 4) \_\_\_\_\_  
A) Low combustion chamber surface area-to-volume ratio  
B) High combustion chamber surface area-to-volume ratio  
C) Non-centrally mounted spark plug  
D) Increased (as much as possible) quench area
- 5) Technician A says that cylinder head resurfacing machines include grinders and milling machines. Technician B says that cylinder head reconditioning should start with resurfacing of valves. Which technician is correct? 5) \_\_\_\_\_  
A) Technician A  
B) Technician B  
C) Both technicians  
D) Neither technician
- 6) Cylinder head intake ports connect the \_\_\_\_\_ to the intake valves. 6) \_\_\_\_\_  
A) Cam lifter  
B) Intake manifold  
C) Coolant passages  
D) Shrouds
- 7) Which of these statements is TRUE about surface finish? 7) \_\_\_\_\_  
A) Cast-iron surfaces should be smoother than aluminum surfaces  
B) The rougher the surface, the higher the microinch finish measurement  
C) The smoother the surface, the higher the microinch finish measurement  
D) A cylinder head should be much smoother than a crankshaft journal
- 8) Technician A says that the most commonly used combustion chamber types include hemispherical, and wedge. Technician B says that coolant and lubricating openings and passages are located throughout most cylinder heads. Which technician is correct? 8) \_\_\_\_\_  
A) Technician A  
B) Technician B  
C) Both technicians  
D) Neither technician
- 9) Two technicians are discussing a Hemi engine. Technician A says that a Hemi is an engine with a hemi-spherical shaped combustion chamber. Technician B says that all Hemi engines are cam-in-block designs. Which technician is correct? 9) \_\_\_\_\_  
A) Technician A only  
B) Technician B only  
C) Both technician A and B  
D) Neither technician A nor B
- 10) Cylinder heads with four valves flow more air than those with two valves because they \_\_\_\_\_ 10) \_\_\_\_\_  
A) Have a greater open area  
B) Use a higher lift camshaft  
C) Increase the velocity of the air  
D) Both A and C

## Answer Key

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- 1) C  
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- 2) A  
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- 3) B  
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- 4) A  
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- 5) A  
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- 6) B  
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- 7) B  
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- 8) C  
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- 9) A  
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- 10) D  
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