

Exit Card Assessment #4 (Monday)

Name: _____

1. When the piston first goes into the cylinder, there is a very slight space for rocking. Explain why the space exists.
- _____

2. The cross-hatch marks on the inside of the cylinder serve an important purpose. What is this purpose?

3. What does the piston skirt do for piston performance?

4. The flex plate is used for which type of transmission?
- _____

5. For the other type of transmission, we would call this same piece
- _____

6. On which component of the engine would I find a reluctor ring?
- _____

7. What is the primary purpose of a reluctor ring?

_____ 8. All overhead valve engines _____.

- a. Use an overhead camshaft
- b. Have the valves located in the cylinder head.
- c. Operate by the two-stroke cycle
- d. Use the camshaft to close the valves

_____ 9. An SOHC V-8 engine has how many camshafts?

- a. 1
- b. 2
- c. 3
- d. 4

Exit Card Assessment #5 (Tuesday)

Name: _____

- _____ 1. The coolant flow through the radiator is controlled by the _____.
- size of the passages in the block.
 - Thermostat
 - Cooling fan(s)
 - Water pump
- _____ 2. Torque is expressed in units of _____.
- pound-feet
 - foot-pounds
 - foot-pounds per minute
 - pound-feet per second.
- _____ 3. Horsepower is expressed in units of _____
- pound-feet
 - foot-pounds
 - foot-pounds per minute
 - pound-feet per second.
- _____ 4. A normally aspirated automobile engine loses about _____ power per 1,000 ft. of altitude.
- 1%
 - 3%
 - 5%
 - 6%
- _____ 5. One cylinder of an automotive 4-stroke cycle engine completes a cycle every _____.
- 90 degrees
 - 180 degrees
 - 360 degrees
 - 720 degrees
- _____ 6. How many rotations of the crankshaft are required to complete each stroke of a 4-stroke cycle engine?
- $\frac{1}{4}$
 - $\frac{1}{2}$
 - 1
 - 2
- _____ 7. A rotating force is called _____.
- Horsepower
 - Torque
 - Combustion pressure
 - Eccentric movement

Exit Card Assessment #6 (Wednesday)

Name: _____

1. Which engine component determines the stroke length?
 - a. crankshaft throw
 - b. connecting rod
 - c. piston
 - d. piston pin

2. What is the perfect (stoichiometric) air/fuel mixture to produce a clean burn of all the fuel?
 - a. 12:1
 - b. 14:1
 - c. 13.5:1
 - d. 14.7:1

How do you know the answer to this? Explain

3. A SOHC V-8 engine has how many camshafts?
 - a. 1
 - b. 2
 - c. 3
 - d. 4

4. A DOHC V-8 engine has how many camshafts?
 - A. 1
 - B. 2
 - C. 3
 - D. 4

5. Which one part determines the stroke of the engine?
_____.

6. What does it mean exactly to say that an engine is naturally aspirated?

7. The _____ cools the antifreeze.

8. The camshaft LIFT determines...

9. The camshaft DURATION determines...
_____.

Exit Card Assessment #7 (Thursday)

Name: _____

1. When do we close the Intake Valve?
 - a. ABDC
 - b. BBDC
 - c. BDC
 - d. ATDC

2. TRUE or FALSE If we increase the duration, we increase the volumetric efficiency up to about 90% from the standard 75-80%.

2. Explain -in at least 3 specific steps—how we get the oil up to our engine head (to the top of the engine). What's the path?

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|--------|
| Step 1 |
| Step 2 |
| Step 3 |

3. TRUE or FALSE The path of lubricating with oil will be the same, whether the camshaft is located in the block or if it is a DOHC.

3. Explain why the oil pan is designed with a larger tray at the front end.

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4. Explain why the Intake valve is larger than the exhaust valve.

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5. If we advance the timing of the engine, what will this do to the burning process?

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5. What is going on to allow the scavenging of the filter?

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WAIT-----Exit Card Assessment #

Name: _____

_____ 1. Technician A says that a crankshaft determines the stroke of an engine. Technician B says that the length of the connecting rod determines the stroke of an engine. Which technician is correct?

- a. Technician A only
- b. Technician B only
- c. Both Technicians A & B
- d. Neither Technicians A nor B

_____ 2. If the crankshaft has turned 540 degrees, you would be just beginning the _____ stroke, and the cam will have turned _____ degrees.

- a. Exhaust; 360
- b. Power; 270
- c. Power; 180
- d. Compression; 720

3. Why is a 50/50 mixture of antifreeze and water commonly used as a coolant?

4. What are some of the heavy metals that can be present in used coolant?

_____ 5. Coolant is water and _____

- a. methanol
- b. Glycerin
- c. Kerosene
- d. Ethylene glycol

_____ 6. As the percentage of antifreeze in the coolant increases, _____.

- a. the freeze point decreases (up to a point)
- b. the boiling point decreases
- c. the heat transfer increases
- d. all of the above

_____ 7. Reusing old coolant is generally not approved by vehicle manufacturers except _____.

- a. GM
- b. Ford
- c. Chrysler
- d. Mercedes

WAIT-----Exit Card Assessment #

Name: _____

_____ 1. Two technicians are discussing testing coolant for proper pH. Technician A says that coolant has a pH above 7 when new and becomes lower with use in an engine. Technician B says that OAT and HOAT coolants have a lower pH when new compared to the old green IATR coolant. Which technician is correct?

- Technician A only
- Technician B only
- Both Technicians A & B
- Neither Technicians A nor B

_____ 2. A voltmeter was used to check the coolant and a reading of a 0.2 volt with the engine off was measured. A reading of 0.8 volt was measured with the engine running and all electrical accessories turned on. Technician A says that the coolant should be flushed to solve the galvanic activity. Technician B says that the ground wires and connections should be inspected and repaired to solve the electrolysis problem. Which technician is correct?

- Technician A only
- Technician B only
- Both Technicians A & B
- Neither Technicians A nor B

3. A water pump is a positive displacement type of pump. (TRUE / FALSE)

_____ 4. The upper radiator collapses when the engine cools. What is the most likely cause?

- defective upper radiator hose
- missing spring from the upper radiator hose, which is used to keep it from collapsing
- defective thermostat
- defective pressure cap

_____ 5. Heat transfer is improved from the coolant to the air when the _____.

- temperature difference is great
- temperature difference is small
- coolant is 95% antifreeze
- both a and c

_____ 6. Water pumps _____.

- Only work at idle and low speeds and are disengaged at higher speeds
- Use engine oil as a lubricant and coolant
- Are driven by the engine crankshaft or camshaft
- Disengage during freezing weather to prevent radiator failure

7. Tell me in your own words why a cooling system is pressurized (remember our pressure cooker analogy)