

**GM Lubrication Systems Module:**

**Name:** \_\_\_\_\_

1. Technician A states that the purpose of lubrication is to reduce the friction of moving engine parts. Technician B states that lubrication does not assist in cooling the engine. Who is correct?
  - a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
  
2. Name 2 major components inside a modern spin on oil filter.
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  
3. Two technicians are discussing the lubrication path inside an engine. Technician A states that oil passes through the oil filter before it is drawn into the oil pump. Technician B states that oil travels to the main oil galleys before it travels to the main and rod bearings. Who is correct?
  - a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
  
4. Name the three types of oil pumps used on GM vehicles.
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_
  
5. When testing oil pressure Technician A states that the engine RPM should be brought up to 1400 Rpm after the vehicle starts. Technician B states that the engine should be up to operating temperature to get an accurate reading. Who is correct?
  - a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

6. When checking for oil leaks on GM vehicles Technician A states that the high intensity lamp and dye method can be used. Technician B states that only the powder method can be used. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

## **GM Cooling Systems Module:**

7. Two technicians are discussing engine coolant. Technician A states that Dex-Cool is orange in color and must be changed every 2 years or 30,000 mi. Technician B states that conventional coolant is green and has a change interval of 5 years or 150,000 mi. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
8. Technician A states that the job of the thermostat is to control the flow of coolant through the radiator. Technician B states that the thermostat enables controlled engine warm up. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
9. While discussing GM engine cooling fans. Technician A states that electric cooling fans can be either the pusher or puller type. Technician B states that GM belt driven fans are of the clutch type. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

10. Technician A states that when testing a General Motors cooling system special tool J24460-01 is required. Technician B states the when testing the radiator cap or surge tank special tool J42401 is required. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

## **GM General Engine Diagnosis Module:**

11. You have an engine with a carbon concern. What GM recommended product can you use to remove the carbon without disassembling the engine?
- a) Brake cleaner
  - b) Water injection
  - c) Propane
  - d) Top engine cleaner
12. We have a valve with damage on the stem tip, and lubrication is sufficient. What do you suspect could be the root cause?
- a) Bent push rod
  - b) Worn valve guide
  - c) Worn cam lobe
  - d) Light carbon on the valve
13. All of the following are general sources of lower engine knocking **except**:
- a) Main/rod bearing knock
  - b) Carbon in the combustion chamber
  - c) Dirty valve lifters
  - d) Loose or broken flywheel
14. Two technicians are discussing a single cylinder misfire. Technician A states that a stretched timing chain could be the cause. Technician B states that an open fuel injector coil could be the cause. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

15. Technician A states that a cylinder leakage test may be used in conjunction with a compression test to isolate the cause of leaking cylinders. Technician B states that the J35667-A or equivalent cylinder leakage tester should be used to perform the test. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
16. Two technicians are discussing engine vacuum readings, Technician A states that normal engine vacuum at idle should be steady at 15-22 inches Hg. Technician B states that excessive vibration at all RPM indicates a restriction in the exhaust. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

## **GM 4200 Camshaft Position Actuator System Operation and Diagnosis**

17. Oil flow through the Camshaft Position solenoid valve is controlled by the\_\_\_\_\_.
- a) PCM
  - b) Camshaft Position Actuator
  - c) Camshaft Position Sensor
  - d) Reluctor Wheel
18. The Camshaft Position Actuator System will only work above\_\_\_\_\_.
- a) 600 RPM
  - b) 1200 RPM
  - c) 2200 RPM
  - d) 2600 RPM
19. The 4200 I6 Camshaft Position Actuator system...
- a) Is located on the intake camshaft
  - b) Is pneumatically operated
  - c) Decreases power and torque
  - d) Eliminates the external EGR system
20. The Camshaft Position Actuator retards exhaust cam timing up to\_\_\_\_\_.
- a) 15 Degrees
  - b) 25 Degrees
  - c) 30 Degrees
  - d) 35 Degrees

21. Oil Flow to the Camshaft Position Actuator is controlled by the\_\_\_\_\_.
- a) Camshaft Position Actuator Solenoid valve
  - b) Reluctor Wheel
  - c) CMP Sensor
  - d) Helical Spline

## **Engine Repair: Engine Lower End**

22. Two technicians are discussing the GM 2.2 Eco Tec engine. Technician A states that this engine uses powdered metal connecting rods with a floating piston pin. Technician B states that this engine uses a single balance shaft to reduce noise and vibration. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
23. Two technicians are discussing the GM 4.2 LL8 engine. Technician A states that this engine utilizes a cast iron shallow skirt engine block design to improve structural rigidity and reduce vibration. Technician B states that the oil pan on this engine is made from cast aluminum and bolts to the bell housing as well as the block. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
24. Two technicians are discussing disassembly procedures on GM aluminum engines. Technician A states that an impact wrench must never be used to loosen any bolts as the special sealer used can cause the female threads in the block to pull. Technician B states these engines require special gasket scrapers and brushes to clean the gasket mating surfaces. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

25. When removing piston and rod assemblies from the GM 2.2 Eco Tech engine. Technician A states that when removing the rod cap make sure to support the piston, As this engine uses low tension piston rings and the piston could fall out of the block. Technician B states that special service tool J-1493-K must be used. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
26. Two technicians are discussing the disassembly procedure on the GM 3.5 LX5 engine. Technician A states that this engine uses powdered metal connecting rods with torque to yield bolts that must be replaced upon reassembly or serious engine damage will occur. Technician B states a plastic pry tool should be used when separating the lower portion of the crankcase from the block. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
27. On the GM 4.6 North Star engine, the orientation of paired connecting rods on each crankpin should be:
- a) The notches in the connecting rod cap must be facing away from each other.
  - b) The notches in the connecting rod cap must face each other.
  - c) Positioned so the red paint mark faces to the front of the engine.
  - d) Dots facing outward.
28. Two technicians are discussing bearing inspection and replacement. Technician A states that if the lower half of the bearing is damaged both the lower and upper bearing should be replaced. Technician B states that if the lower bearing is suitable for service that the upper bearing should also be suitable as well. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

29. When cleaning pistons in GM engines Technician A states that a wire brush should never be used to clean any part of the piston. Technician B states that a bead blaster is recommended by GM to clean the carbon from piston. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
30. List the three special service tools needed/used for the GM 4.2 LL8 Piston, Connecting Rod and Bearing installation procedure.
- a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_

### **Engine Repair: Timing Components**

31. Two technicians are discussing the installation of the exhaust camshaft actuator in a GM 4.2 LL8 engine. Technician A states that the camshaft actuator must be fully retarded during installation or engine damage may result. Technician B states that the camshaft actuator must be fully advanced during installation or engine damage may result. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B
32. Two technicians are discussing the right and left hand timing chain tensioner used on the GM 3.5 LX5 engine. Technician A states that both right and left hand side tensioners can be locked in place by inserting a piece of wire into the access hole on the side of the tensioner. Technician B states that held in the locked position by GM special tool J-2436-A. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B

33. Two technicians are discussing the installation of the intake/ exhaust camshaft sprockets and chain on a GM 2.2 L61 engine. Technician A states that new bolts should be used to install the sprockets on the camshafts. Technician B states that this engine uses a special chain with 3 colored links. 2 are of a matching color and the third is a unique color. This is used to aid the technician in timing the engine. Who is correct?
- a) Technician A only
  - b) Technician B only
  - c) Both A and B
  - d) Neither A nor B