INSTRUCTIONS
Write the letter of the answer on each blank provided.

OBJECTIVE 1
Identify types of ignition systems shown in illustrations.

Figure 1

1. True or False: Figure 1 is an electronic distributor ignition system.
   A. true
   B. false
OBJECTIVE 2

Label ignition system components indicated on illustrations.

Directions: Refer to Figure 1 and Figure 2 to answer questions 2 - 8.

2. In Figure 1, which of the following ignition system components is indicated by the number 1?
   A. battery  
   B. ignition control module (with ignition coils)  
   C. ignition switch  
   D. spark plugs

3. In Figure 1, which of the following ignition system components is indicated by the number 3?
   A. battery  
   B. engine computer  
   C. ignition control module (with ignition coils)  
   D. ignition switch

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4. In Figure 1, which of the following ignition system components is indicated by the number 2?
   A. battery
   B. engine computer
   C. ignition control module (with ignition coils)
   D. ignition switch

5. In Figure 2, which of the following ignition system components is indicated by the number 6?
   A. distributor
   B. ignition coil
   C. ignition control module
   D. vacuum advance

6. In Figure 2, which of the following ignition system components is indicated by the number 5?
   A. distributor cap
   B. ignition coil
   C. ignition control module
   D. ignition switch

7. In Figure 2, which of the following ignition system components is indicated by the number 3?
   A. distributor
   B. distributor cap
   C. ignition coil
   D. vacuum advance

8. In Figure 2, which of the following ignition system components is indicated by the number 2?
   A. distributor
   B. distributor cap
   C. spark plugs
   D. vacuum advance
OBJECTIVE 3

Match the names of ignition system components to descriptions of their functions.

9. Which of the following ignition system components uses electricity from the ignition coil to ignite the air-fuel mixture in the cylinder?
   A. battery
   B. distributor cap
   C. ignition coil
   D. spark plug

10. Which of the following ignition system components advances spark timing?
    A. distributor
    B. ignition coil
    C. ignition control module
    D. vacuum advance

11. Which of the following ignition system components reports the camshaft and the valve position on the number-one piston?
    A. camshaft position sensor
    B. crankshaft position sensor
    C. ignition control module
    D. vacuum advance

12. Which of the following ignition system components increases the low voltage from the battery to the higher voltage required to create a spark at the spark plug?
    A. distributor cap
    B. ignition coil
    C. ignition switch
    D. spark plug

13. Which of the following ignition system components receives information from various sources, analyzes that information, and uses it to interrupt the ground to the coils at the correct instant?
    A. distributor
    B. engine computer
    C. ignition control module
    D. vacuum advance
14. Which of the following ignition system components transfers electrical power from the coil wire to the rotors and then receives current from the rotor and transfers it to the spark plug wires?

A. distributor  
B. distributor cap  
C. ignition coil  
D. ignition control module

15. Which of the following ignition system components reports engine vibration indicating the need for less spark advance?

A. camshaft position sensor  
B. crankshaft position sensor  
C. engine computer  
D. knock sensor

Compare and contrast design characteristics of types of ignition systems.

16. True or False: Only in an electronic distributorless ignition system is the regulation of spark timing controlled by a computer.

A. true  
B. false

17. True or False: The firing order of cylinders is determined by the distributor on an electronic distributor ignition system, but the firing order of cylinders is determined by a computer on an electronic distributorless ignition system.

A. true  
B. false

18. True or False: Both electronic distributorless and electronic distributor ignition systems ignite the air-fuel mixture in the cylinders and require regular maintenance.

A. true  
B. false
OBJECTIVE 5

Describe the function of the types of triggering systems used on electronic ignition systems.

19. Which of the following describes the operation of a magnetic pickup triggering system?

A. uses a coil magnetic type sensor to detect the rotation of a toothed wheel and sends a signal to the ignition control unit
B. uses a coil magnetic type sensor to detect the rotation of trigger blades or shutters and sends a signal to the ignition control unit
C. uses a semiconductor sensor to detect the rotation of trigger blades or shutters and sends a signal to the ignition control unit
D. uses virtually the same operation as a Hall effect triggering system

OBJECTIVE 6

Distinguish between descriptions of the ignition system's primary circuit and secondary circuit components.

Indicate whether the questions below refer to primary or secondary circuits.

20. This ignition circuit is made up of those parts through which the high voltage from the ignition coil flows.

A. primary circuit
B. secondary circuit

21. This ignition circuit is made up of those parts through which low-voltage battery current flows.

A. primary circuit
B. secondary circuit

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TEACHER MATERIALS - Engine Performance Specialist
WRITTEN TEST - CIMC - 7 - 30
Label the parts of an ignition coil indicated on an illustration.

22. Which of the following ignition coil parts is indicated by the number 6 on the illustration?

A. coil cap
B. coil case
C. primary winding
D. secondary winding

23. Which of the following ignition coil parts is indicated by the number 2 on the illustration?

A. coil cap
B. high-voltage terminal
C. primary terminals
D. sealing nipple
24. Which of the following ignition coil parts is indicated by the number 5 on the illustration?

A. glass insulation  
B. laminations  
C. primary terminals  
D. primary winding

25. Which of the following ignition coil parts is indicated by the number 8 on the illustration?

A. coil cap  
B. coil case  
C. glass insulation  
D. lamination

26. Which of the following distributor parts is indicated by the number 2 on the illustration?

A. condenser  
B. distributor cap  
C. cover  
D. housing  
E. rotor
27. Which of the following distributor parts is indicated by the number 3 on the illustration?

A. distributor cap
B. coil
C. cover
D. housing
E. rotor

28. Which of the following distributor parts is indicated by the number 6 on the illustration?

A. distributor cap
B. contact points
C. cover
D. housing
E. rotor

29. Which of the following spark plug parts is indicated by the number 1 on the illustration?

A. center electrode
B. insulator tip
C. side electrode
D. terminal

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OPTION 10

30. Which of the following spark plug parts is indicated by the number 4 on the illustration?
A. air gap
B. center electrode
C. insulator tip
D. side electrode

31. Which of the following spark plug parts is indicated by the number 8 on the illustration?
A. gasket or seal
B. insulator ribs
C. shell
D. side electrode

32. Which of the following spark plug parts is indicated by the number 6 on the illustration?
A. air gap
B. center electrode
C. gasket or seal
D. side electrode

33. Which of the following types of spark plugs has multiple electrodes requiring a wide jump from the center electrode to the side electrodes?
A. hot spark plug
B. multiple-electrode spark plug
C. resistor spark plug
D. wide-gap spark plug

34. Which of the following types of spark plugs has a short insulator tip and a cooler operating temperature, preventing overheating and preignition in engines that operate at higher speeds?
A. cold spark plug
B. narrow-gap spark plug
C. single-electrode spark plug
D. resistor spark plug

Match the names of types of spark plugs to descriptions of their design characteristics.

30. Which of the following spark plug parts is indicated by the number 4 on the illustration?
A. air gap
B. center electrode
C. insulator tip
D. side electrode

31. Which of the following spark plug parts is indicated by the number 8 on the illustration?
A. gasket or seal
B. insulator ribs
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32. Which of the following spark plug parts is indicated by the number 6 on the illustration?
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