INSTRUCTIONS

Write the letter of the answer in each blank provided.

OBJECTIVE 1

List safety hazards associated with engine performance work.

1. Which of the following lists of injuries are associated with engine performance work?
   A. allergic reactions, electrical shock, exposure to toxic materials
   B. electrical shock, exposure to toxic materials, muscle strains, hearing loss
   C. cuts, electrical shock, exposure to toxic materials, muscle strains
   D. cuts, electrical shock, repetitive motion injuries, exposure to toxic materials

OBJECTIVE 2

List chemicals related to automotive engine service that contain hazardous materials.

2. Which of the following is NOT a chemical related to automotive engine service that contains hazardous materials?
   A. battery acid
   B. carburetor cleaners
   C. gasoline additives
   D. injector solutions

3. Which of the following is NOT a chemical related to automotive engine service that contains hazardous materials?
   A. antifreeze
   B. exhaust gases
   C. compounds used to free valve lifters
   D. salt
OBJECTIVE 3

List the names of the major engine systems.

4. Which of the following is a TRUE list of the major engine systems?

A. ignition system, lubrication system, cooling system, charging system
B. starting system, heating system, charging system, exhaust system
C. fuel system, lubrication system, fluid system, sound system
D. ignition system, charging system, fluid system, exhaust system

OBJECTIVE 4

Describe the functions of the major engine systems.

5. Which of the following systems provides the spark to burn the fuel?

A. charging system
B. fuel system
C. ignition system
D. starting system

6. True or False: The exhaust system reduces friction and cleans the engine.

A. True
B. False

7. True or False: The starting system also charges the battery.

A. True
B. False

OBJECTIVE 5

List the three elements that must be present in order for combustion to occur.

8. Which of the following elements is NOT necessary in order for combustion to occur?

A. air
B. hydrocarbons
C. fuel
D. heat
OBJECTIVE 6

List the four strokes of an internal combustion engine in the order of their occurrence.

9. Which of the following lists in order of occurrence the four strokes of an internal combustion engine?

A. compression, intake, power, exhaust  
B. intake, power, compression, exhaust  
C. intake, compression, power, exhaust  
D. power, compression, intake, exhaust

OBJECTIVE 7

Using illustrations of cylinders, sketch the spark in the correct engine stroke.

10. During which of the following engine strokes is spark delivered to create combustion?

A. compression  
B. exhaust  
C. intake  
D. power

OBJECTIVE 8

Using illustrations of cylinders, sketch the piston in the correct position for each of the four engine strokes.

11. For the figure below, identify the engine stroke indicated by the number 3.

A. compression  
B. exhaust  
C. intake  
D. power

May be photocopied for student use.
12. For the figure below, identify the engine stroke indicated by the number 4.

   A. compression
   B. exhaust
   C. intake
   D. power

13. True or False: During the intake stroke, the piston moves down away from the valves.

   A. True
   B. False

14. True or False: During the power stroke, the piston moves up toward the valves.

   A. True
   B. False

15. True or False: During the exhaust stroke, the intake valve is open.

   A. True
   B. False

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16. True or False: During the intake stroke, the intake valve is open.

   A. True
   B. False

Using illustrations of cylinders, sketch the exhaust valve in the correct position for each of the four engine strokes.

17. True or False: During the exhaust stroke, the exhaust valve is open.

   A. True
   B. False

List the names of emission control systems.

18. Which of the following is the name of an emission control system?

   A. air conditioning system
   B. exhaust system
   C. fuel injection system
   D. positive crankcase ventilation system

19. Which of the following is the name of an emission control system?

   A. carburetor heat control system
   B. heated air induction system
   C. negative crankcase ventilation system
   D. oxygen injection system

20. Which of the following is the name of an emission control system?

   A. oxygen exhaust system
   B. catalytic control system
   C. carburetor control system
   D. air conditioning control system