

Chapter 01: Engine Operation

1. The I-head engine has the valves in the block.

- a. True
- b. False

ANSWER: False

2. The gasoline engine is also known as a spark ignition engine.

- a. True
- b. False

ANSWER: True

3. A two-stroke engine has a power stroke every other crankshaft revolution.

- a. True
- b. False

ANSWER: False

4. In four-stroke engine operation, gasoline will not burn unless it is mixed with the correct amount of air.

- a. True
- b. False

ANSWER: True

5. The camshaft controls the rate at which the engine breathes.

- a. True
- b. False

ANSWER: True

6. What cylinder arrangement is popular with designers when an engine has more than four cylinders?

- a. radial
- b. opposed
- c. in-line
- d. V-type

ANSWER: d

7. How many degrees is a complete cycle on a four-stroke engine?

- a. 120
- b. 180
- c. 360
- d. 720

ANSWER: d

8. What cylinder number is the closest to the front of the engine on almost all V-type engines?

- a. 1
- b. 2
- c. 4
- d. 6

Chapter 01: Engine Operation

ANSWER:

a

9. What proportion of gross horsepower is consumed by all of the accessories on a modern engine?

- a. 10%
- b. 25%
- c. 30%
- d. 50%

ANSWER:

b

10. How often does a power stroke occur on a V8 engine?

- a. Every 90 degrees
- b. Every 360 degrees
- c. Every 120 degrees
- d. Every 720 degrees

ANSWER:

a

11. Most of today's cars are powered by _____.

- a. Rudolph-cycle engines
- b. Otto-cycle engines
- c. Ford-cycle engines
- d. Hemi-cycle engines

ANSWER:

b

12. What is true of the I-head engine? Technician A says that the I-head engine is widely used in automobiles because it can breathe better than earlier engine designs. Technician B says that increased valve lift is possible with an I-head engine. Which technician is correct?

- a. It is not widely used in automobiles.
- b. It does not allow for increased valve lift.
- c. It does not breathe as well as earlier engine designs.
- d. It breathes better than earlier engine designs.

ANSWER:

d

13. How many strokes per cycle do most automotive gasoline engines have?

- a. 2
- b. 6
- c. 4
- d. 8

ANSWER:

c

14. The term "blowby" refers to gases escaping past the _____.

- a. rings
- b. crankshaft
- c. flywheel

Chapter 01: Engine Operation

- d. flywheel

ANSWER:

a

15. Which of the following is NOT an Otto-cycle engine?

- a. radial
- b. V-type
- c. opposed
- d. in-line

ANSWER:

a

16. The ideal air-fuel mixture for a gasoline engine is _____.

- a. 13.5:1
- b. 16:1
- c. 10.5:1
- d. 14.7:1

ANSWER:

d

17. What is the purpose of the harmonic balancer?

ANSWER: The purpose is to dampen torsional vibrations that could result in a broken crankshaft.

18. Briefly explain how the ignition works in a diesel engine.

ANSWER: Diesel compression ratios range from 15:1 to 22:1. The diesel engine compresses only air. When diesel fuel is injected into the cylinder at the exact moment when ignition is desired, it burns easily in the hot environment of the compressed air.

19. What is the difference between a short block and a long block?

ANSWER: A complete engine assembly including the heads is called a long block; without heads, it is called a short block.

20. Describe the major differences between diesel and gasoline engines.

ANSWER: In a diesel engine, ignition is caused by the heat of compression; in a gasoline engine, ignition is caused by an electric spark.