

18. ozone
19. 2
20. Applicable EPA regulations are based on the year the engine was manufactured.

Answers to the Workbook Questions

1. A. Gasoline
2. regular
3. False
4. Oxidation forms a sticky, gum-like material that may clog small passageways in the carburetor and cause poor engine performance or hard starting.
5. two-cycle
6. D. All of the above.
7. LPG engines are often used in these environments because they emit fewer noxious fumes.
8. slower
9. A. LPG tank
B. Primary regulator
C. Secondary regulator
D. Carburetor
E. Engine
10. Any five of the following in any order: cheaper, less wear, less oil consumption, lower maintenance costs, smoother power, fewer noxious or poisonous exhaust gases, fewer carbon dioxide emissions.
11. Any order: initial equipment costs are higher, fewer accessible fuel points available, harder starting in cold weather.
12. low
13. 20
14. B. prevent a vacuum
15. A. to capture large particles before they enter the fuel tank
16. The weighted, flexible line will move so it is always located where the fuel is deepest in the tank when the vehicle is at a steep angle.
17. A. Pick-up tube
B. Fuel tank
C. Sediment reservoir
D. Filter element
18. The engine is designed for use in situations where gravity cannot reliably feed the fuel to the carburetor. The fuel tank may be located away from the carburetor or the engine may be expected to operate at different angles.
19. constant
20. C. vacuum pulses from the crankcase or intake manifold
21. pressurized
22. vapor lock
23. vapor return
24. Any order: oil-wetted, dry, and dual element
25. False
26. The crankcase breather prevents excessive pressure from building up in the crankcase.
27. spark arrestor
28. backpressure
29. evaporative
30. Student answers will vary. Evaluate individually.
31. Student answers will vary. Evaluate individually.

⁸ Answers to Chapter Quiz

1. B. ability to resist detonation
2. A. substances like ethers and alcohol added to fuel to increase octane
3. D. All of the above.
4. hot
5. B. it produces 20% less horsepower than a gasoline engine
6. B. are designed to operate in many different positions
7. A. oil-wetted
8. C. prevent excessive pressure from developing in the crankcase
9. D. All of the above.
10. True
11. False
12. False
13. pressurized
14. spark arrestor
15. evaporative

19. C. open the throttle valve
20. Any order: improper carburetor adjustment, binding of governor linkage, vibration of the governor spring.

Answers to the Workbook Questions

1. fuel, air
2. B. vaporize the gasoline
3. 15, 1
4. vacuum
5. atmospheric pressure
6. A restriction in a passage speeds up incoming air and reduces its pressure. The reduction in pressure draws fuel into the airstream.
7. A. Natural draft
B. Updraft
C. Downdraft
8. B. updraft
9. C. downdraft
10. To maintain a constant level of fuel in the float bowl.
11. needle
12. vent
13. choke
14. richer
15. The choke restricts airflow, creating a higher vacuum in the manifold that draws more fuel from the main nozzle.
16. To regulate the amount of air-fuel mixture entering the cylinders.
17. When the throttle valve is opened, maximum air and fuel can flow into cylinders thereby producing maximum power and speed. When the valve closes, less fuel and air mixture enters the cylinder.
18. well
19. C. part throttle
20. B
21. C
22. A
23. manifold vacuum
24. A. upstroke
25. A. idle discharge ports only
26. C. are always mounted on top of the fuel tank
27. C. draws fuel from the fuel tank and pumps it into the air horn
28. B. increases the air pressure in the float bowl to force fuel into the main nozzle
29. Any order: air vane (pneumatic), centrifugal (mechanical), and vacuum.
30. flywheel
31. A. Spring bracket
B. Governor spring
C. Link
D. Air vane
32. B. longer, lower
33. hunting
34. vacuum
35. Student answers will vary. Evaluate individually. Key points: The carburetor adjusts the fuel air mixture depending on demand. The choke valve enriches the fuel mixture for cold starts. The throttle valve opens and closes to change the amount of air-fuel mixture entering the engine. The governor adjusts the throttle to maintain a set engine speed under changing loads.

Answers to Chapter ⁹ Quiz

1. C. about 15 parts air to 1 part fuel
2. B. increases the speed of airflow and decreases pressure
3. D. All of the above.
4. B. too much gas will be provided to the engine
5. C. provide a rich mixture for cold engine starting
6. C. most fuel is provided to the engine through the primary idle orifice
7. C. is always mounted on top of the fuel tank
8. B. close the throttle
9. B. the movement of flyweights on the governor gear
10. False
11. True
12. False
13. differences
14. acceleration
15. hunting