

***Auto Engine Performance and Drivability 5th
edition Johanson Test Bank***

SKU: 9781645641711-TEST-BANK

1. Until around the 1960s, which of the following was still true?
 - a. Fuel economy was unimportant to most drivers.
 - b. Almost no one was concerned about exhaust emissions.
 - c. Solid-state electronic components did not exist "under the hood."
 - *d. All of the above.

2. In which decade were the first emission controls introduced?
 - a. The 1950s.
 - *b. The 1960s.
 - c. The 1970s.
 - d. The 1980s.

3. Crude oil supplies are _____.
 - *a. constantly being depleted by use
 - b. renewable resources
 - c. mostly found in the United States
 - d. never going to run out

4. The majority of driving in the U.S. is done under which conditions?
 - *a. At low speeds in urban areas.
 - b. At highway speeds on the Interstate system.
 - c. As a combination of off- and on-road driving.
 - d. At medium speeds on rural highways.

5. Modern horsepower readings are taken at the _____.
 - a. engine flywheel
 - b. engine damper
 - c. transmission/transaxle output shaft
 - *d. driving wheels

6. Technician A says that a tune-up will probably cure most driveability problems. Technician B says that, even if no driveability problem is evident, a tune-up should be performed at every second oil change. Who is right?

- a. A only.
- b. B only.
- c. Both A and B.
- *d. Neither A nor B.

7. Current final drive gear ratios are a compromise between fuel economy and ____.

- *a. low-speed power and acceleration
- b. high-speed power and acceleration
- c. top speed
- d. smoothness during transmission/transaxle shifts

8. Technician A says that engine power must be used to overcome wind resistance at all speeds. Technician B says that air dams increase flow through the vehicle radiator. Who is correct?

- a. A only.
- b. B only.
- *c. Both A and B.
- d. Neither A nor B.

9. Technician A says that on a mild hybrid, the gasoline engine is shut off when the vehicle comes to a stop. Technician B says that regenerative braking can be used in any type of vehicle. Who is correct?

- *a. A only.
- b. B only.
- c. Both A and B.
- d. Neither A nor B.

10. On a fuel cell vehicle, ____.

- a. oxygen and hydrogen are burned
- b. oxygen and hydrogen are stored in a tank
- *c. electricity propels the vehicle
- d. Either A or C.

11. The energy produced by regenerative braking is used to ____.

- a. help slow the vehicle
- b. charge the vehicle battery
- c. move the vehicle
- *d. Both A and B.

12. Technician A says that use of computer controls has increased the number of components needing periodic replacement. Technician B says that use of computer controls has made driveability diagnosis more complex. Who is correct?

- a. A only.
- *b. B only.
- c. Both A and B.
- d. Neither A nor B.

13. A motor/generator consists of:

- a. An electric motor and an internal combustion engine.
- b. An internal combustion engine and a generator.
- *c. An electric motor and a generator.
- d. A or B, depending on the manufacturer.

14. Technician A says that unitized bodies develop fewer rattles than bodies bolted to a separate frame. Technician B says that unitized bodies transmit more rattles from other places in the vehicle than non-unitized bodies. Who is correct?

- a. A only.
- b. B only.
- *c. Both A and B.
- d. Neither A nor B.

15. Supplies of crude oil are practically inexhaustible; the problem is getting them to refineries.

- a. True
- *b. False

16. Some vehicle parts are made from recycled plastics, such as soft drink bottles.

- *a. True
- b. False

17. Some engine mounts are filled with fluid.

- *a. True
- b. False

18. A fuel cell vehicle uses a small internal combustion engine with a supercharger.

- a. True
- *b. False

19. A hybrid vehicle produces no emissions when it is stopped in traffic.

- *a. True
- b. False

20. Transmission shift valves are moved by hydraulic pressure, as opposed to how they were moved in older designs.

- a. True
- *b. False

21. Vacuum-operated EGR valves have been replaced with exhaust-operated valves.

- a. True
- *b. False

22. Manufacturing tolerances have decreased greatly over the past few decades.

- *a. True
- b. False

23. Fuel cell technology involves a chemical reaction.

- *a. True
- b. False

24. The stated vehicle power is measured at the engine flywheel.

- a. True
- *b. False

25. The final drive ratio is around 4.11 to 1.

- a. True
- *b. False

26. Aerodynamic body shapes reduce top speed.

- a. True
- *b. False

27. Hybrid vehicles do not have a separate alternator.

- *a. True
- b. False

28. Under heavy acceleration, a hybrid vehicle may be driven by the internal combustion engine and the motor/generator.

- *a. True
- b. False

29. Match the vehicle part or system with its description.

- | | |
|---|----------------------------|
| [i] 1. Stamped in one piece or welded together. | a. Front-wheel drive |
| [b] 2. Turned by exhaust gases. | b. Turbocharger |
| [c] 3. Reduces torque converter slippage. | c. Lockup clutch |
| [f] 4. Produces electricity by chemical reaction. | d. Shift light |
| [d] 5. Used on vehicles with manual transmissions/transaxles. | e. Fuel injection |
| [e] 6. First used on diesel engines. | f. Fuel cell |
| [h] 7. Can move the vehicle if the engine fails. | g. Oxygen sensor |
| [a] 8. A method of reducing drivetrain weight. | h. Integrated motor assist |
| | i. Unibody |

30. Match the particular engine or vehicle characteristic with the decade during which it was widely used. Some answers may be used more than once.

- | | |
|---|------------------|
| [g] 1. Average weight of 4000 pounds (1814 kg). | a. 1990s engine |
| [f] 2. Average weight of 3000 pounds (1360 kg). | b. 1990s engine |
| [e] 3. 350 cu. in. (5.7 L). | c. 1990s vehicle |
| [b] 4. 230 cu. in. (3.8 L). | d. 1990s vehicle |
| [a] 5. Fuel injection. | e. 1960s engine |
| [c] 6. Overdrive transmission. | f. 1990s vehicle |
| [d] 7. Front-wheel drive. | g. 1960s vehicle |

31. Automatic transmissions/transaxles have housings made of ____.

Correct Answer(s):
a. aluminum

32. A manual transmission/transaxle may have as many as ____ speeds.

Correct Answer(s):

a. six

b. 6

33. The ____ an engine turns at highway speeds, the less fuel it uses.

Correct Answer(s):

a. slower

34. Almost all older vehicles had ____-wheel drive.

Correct Answer(s):

a. rear

35. When fuel is broken into small particles, it is said to be ____.

Correct Answer(s):

a. atomized

36. Turbochargers and superchargers force more ____ into the engine.

Correct Answer(s):

a. air

37. In a hybrid vehicle, the integrated motor assist is installed between the engine and ____.

Correct Answer(s):

a. transmission/transaxle

b. transmission or transaxle

c. transmission and transaxle

38. Good driveability means engine and vehicle operation without any obvious ____.

Correct Answer(s):

a. defects

39. A typical overdrive ratio is around ____ to 1.

Correct Answer(s):

a. 0.7

b. .7

40. It is uncommon for today's technician to go through even one day without referring to ____ information.

Correct Answer(s):

a. service

41. Today, engine power is measured at the ____.

Correct Answer(s):

a. drive wheels

42. A fuel cell vehicle must be refilled with ____.

Correct Answer(s):

a. hydrogen