**[1] Gleim #: 2.3.13 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT088**

What does the red line on an airspeed indicator represent?

A. Turbulent or rough-air speed.
B. Maneuvering speed.
C. Never-exceed speed.

**[2] Gleim #: 2.1.6 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT215**

In the Northern Hemisphere, the magnetic compass will normally indicate a turn toward the south when

A. the aircraft is decelerated while on a west heading.
B. a right turn is entered from a west heading.
C. a left turn is entered from an east heading.

**[3] Gleim #: 2.7.40 -- Source: AvW Chap 3 -- Learning Statement Code: PLT167**

Which condition would cause the altimeter to indicate a lower altitude than true altitude?

A. Air temperature lower than standard.
B. Air temperature warmer than standard.
C. Atmospheric pressure lower than standard.

**[4] Gleim #: 2.5.31 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT345**

Under what condition is pressure altitude and density altitude the same value?

A. At sea level, when the temperature is 0°F.
B. When the altimeter has no installation error.
C. At standard temperature.

**[5] Gleim #: 2.19.88 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT207**

Which of the following is a true statement concerning electrical systems?

A. The master switch provides current to the electrical system.
B. The airspeed indicator is driven by the electrical system.
C. Lights and radios use the electrical system for power.

**[6] Gleim #: 2.4.25 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT041**

(Refer to Figure 3.) Altimeter 1 indicates

A. 500 feet.
B. 1,500 feet.
C. 10,500 feet.

**[7] Gleim #: 2.11.56 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT350**

How is engine operation controlled on an engine equipped with a constant-speed propeller?

A. The throttle controls engine RPM as registered on the tachometer and the mixture control regulates the power output.
B. The throttle controls power output as registered on the manifold pressure gauge and the propeller control regulates a constant blade angle.
C. The throttle controls power output as registered on the manifold pressure gauge and the propeller control regulates engine RPM.

**[8] Gleim #: 2.13.61 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT136**

With regard to carburetor ice, float-type carburetor systems in comparison to fuel injection systems are generally considered to be

A. more susceptible to icing.
B. susceptible to icing only when visible moisture is present.
C. equally susceptible to icing.

**[9] Gleim #: 2.4.26 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT041**

(Refer to Figure 3.) Altimeter 3 indicates

A. 9,500 feet.
B. 15,940 feet.
C. 10,950 feet.

**[10] Gleim #: 2.7.39 -- Source: AvW Chap 3 -- Learning Statement Code: PLT167**

If a flight is made from an area of high pressure into an area of lower pressure without the altimeter setting being adjusted, the altimeter will indicate

A. lower than the actual altitude above sea level.
B. higher than the actual altitude above sea level.
C. the actual altitude above sea level.

**[11] Gleim #: 2.18.84 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT343**

Should it become necessary to handprop an airplane engine, it is extremely important that a competent pilot

A. be in the cockpit and call out all commands.
B. be at the controls in the cockpit.
C. call "contact" before touching the propeller.

**[12] Gleim #: 2.13.63 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT190**

The possibility of carburetor icing exists even when the ambient air temperature is as

A. high as 70°F and the relative humidity is high.
B. high as 95°F and there is visible moisture.
C. low as 0°F and the relative humidity is high.

**[13] Gleim #: 2.3.17 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT088**

(Refer to Figure 4.) What is the full flap operating range for the airplane?

A. 65 to 165 MPH.
B. 60 to 208 MPH.
C. 60 to 100 MPH.

**[14] Gleim #: 2.15.70 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT253**

During the run-up at a high-elevation airport, a pilot notes a slight engine roughness that is not affected by the magneto check but grows worse during the carburetor heat check. Under these circumstances, what would be the most logical initial action?

A. Check the results obtained with a leaner setting of the mixture.
B. Taxi back to the flight line for a maintenance check.
C. Reduce manifold pressure to control detonation.

**[15] Gleim #: 2.19.87 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT207**

To keep a battery charged, the alternator voltage output should be

A. equal to the battery voltage.
B. higher than the battery voltage.
C. less than the battery voltage.

**[16] Gleim #: 2.14.69 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT189**

What change occurs in the fuel/air mixture when carburetor heat is applied?

A. The fuel/air mixture becomes leaner.
B. A decrease in RPM results from the lean mixture.
C. The fuel/air mixture becomes richer.

**[17] Gleim #: 2.9.47 -- Source: AAH Chap 5 -- Learning Statement Code: PLT194**

What is a benefit of flying with a glass cockpit?

A. There is no longer a need to carry paper charts in flight.
B. Terrain avoidance is guaranteed.
C. Situational awareness is increased.

**[18] Gleim #: 2.17.82 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT250**

Which would most likely cause the cylinder head temperature and engine oil temperature gauges to exceed their normal operating ranges?

A. Using fuel that has a higher-than-specified fuel rating.
B. Using fuel that has a lower-than-specified fuel rating.
C. Operating with higher-than-normal oil pressure.

**[19] Gleim #: 2.5.30 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT023**

What is density altitude?

A. The pressure altitude corrected for nonstandard temperature.
B. The altitude read directly from the altimeter.
C. The height above the standard datum plane.

**[20] Gleim #: 2.14.67 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT189**

Generally speaking, the use of carburetor heat tends to

A. increase engine performance.
B. decrease engine performance.
C. have no effect on engine performance.

**[21] Gleim #: 2.17.80 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT250**

To properly purge water from the fuel system of an aircraft equipped with fuel tank sumps and a fuel strainer quick drain, it is necessary to drain fuel from the

A. fuel strainer drain.
B. fuel strainer drain and the fuel tank sumps.
C. lowest point in the fuel system.

**[22] Gleim #: 2.12.60 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT478**

If the ignition switch ground wire becomes disconnected, the magneto

A. will not operate.
B. may continue to fire.
C. will not operate because the battery is disconnected from the circuit.

**[23] Gleim #: 2.3.20 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT132**

(Refer to Figure 4.) What is the maximum flaps-extended speed?

A. 165 MPH.
B. 65 MPH.
C. 100 MPH.

**[24] Gleim #: 2.16.73 -- Source: PHAK Chap 6 -- Learning Statement Code: PLT115**

Detonation occurs in a reciprocating aircraft engine when

A. the unburned charge in the cylinders explodes instead of burning normally.
B. the spark plugs are fouled or shorted out or the wiring is defective.
C. hot spots in the combustion chamber ignite the fuel/air mixture in advance of normal ignition.

**[25] Gleim #: 2.5.28 -- Source: PHAK Chap 7 -- Learning Statement Code: PLT023**

What is absolute altitude?

A. The height above the standard datum plane.
B. The altitude read directly from the altimeter.
C. The vertical distance of the aircraft above the surface.

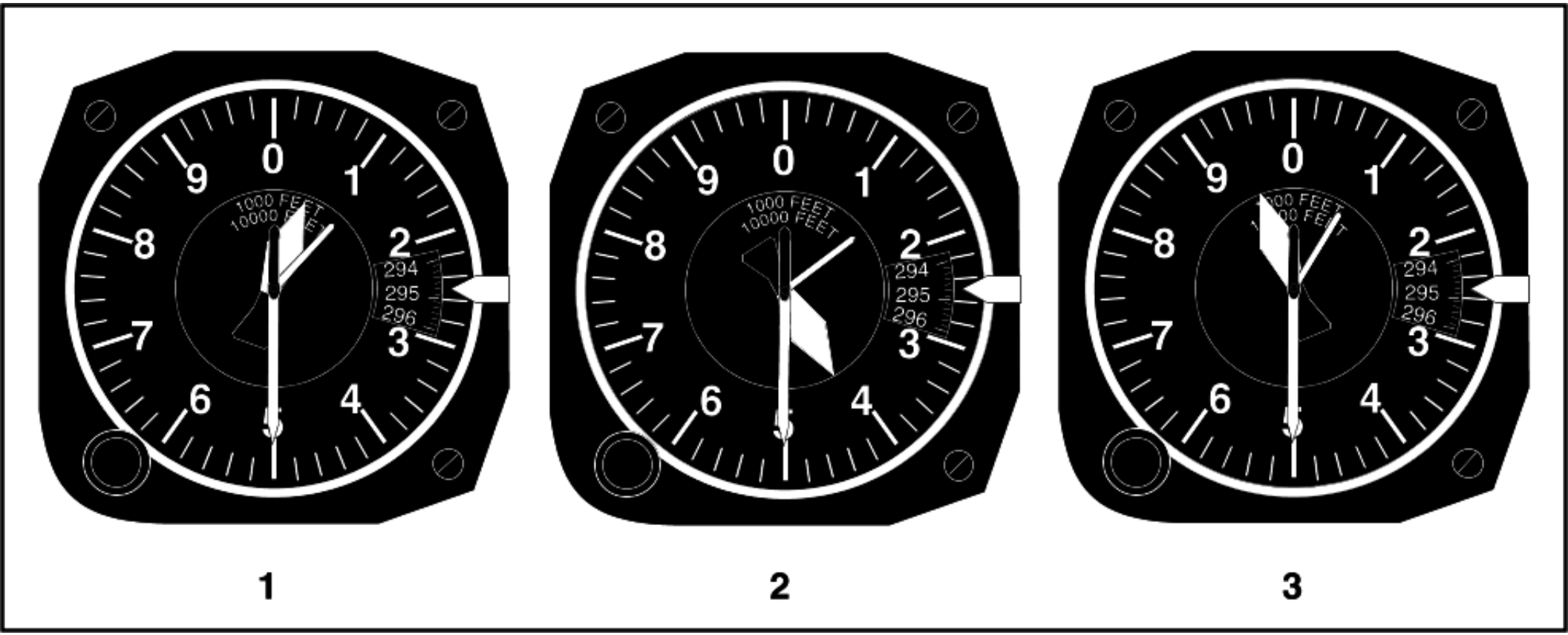


Figure 3 - Altimeter.


Figure 4 - Airspeed Indicator.

**[1] Gleim #: 2.3.13 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. Turbulent or rough-air speed is not indicated on the airspeed indicator.
- Answer (B) is **incorrect**. Maneuvering speed is not indicated on the airspeed indicator.
- Answer (C) is **correct**. The red line on an airspeed indicator indicates the maximum speed at which the airplane can be operated in smooth air, which should never be exceeded intentionally. This speed is known as the never-exceed speed.

**[2] Gleim #: 2.1.6 -- Source: PHAK Chap 7**

- Answer (A) is **correct**. In the Northern Hemisphere, a magnetic compass will normally indicate a turn toward the south if an airplane is decelerated while on an east or west heading.
- Answer (B) is **incorrect**. Turning errors do not occur from a west heading.
- Answer (C) is **incorrect**. Turning errors do not occur from an east heading.

**[3] Gleim #: 2.7.40 -- Source: AvW Chap 3**

- Answer (A) is **incorrect**. When flying in air that is colder than standard temperature, the airplane will be lower than the altimeter indicates (“high to low, look out below”).
- Answer (B) is **correct**. In air that is warmer than standard temperature, the airplane will be higher than the altimeter indicates. Said another way, the altimeter will indicate a lower altitude than actually flown.
- Answer (C) is **incorrect**. The altimeter setting corrects the altimeter for nonstandard pressure.

**[4] Gleim #: 2.5.31 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. Standard temperature at sea level is 59°F, not 0°F.
- Answer (B) is **incorrect**. Installation error refers to pitot tubes and airspeed, not altimeter and altitude.
- Answer (C) is **correct**. Pressure altitude and density altitude are the same when temperature is standard.

**[5] Gleim #: 2.19.88 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. The master switch provides electrical current to all electrical systems except the ignition system.
- Answer (B) is **incorrect**. The airspeed indicator operates on the pitot-static system, not the electrical system.
- Answer (C) is **correct**. Lights, radios, and electrical fuel pumps are examples of equipment that commonly use the electrical system.

**[6] Gleim #: 2.4.25 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. If it were indicating just 500 ft., the short and medium needles would have to be on or near zero.
- Answer (B) is **incorrect**. If it were 1,500 ft., the shortest needle would be near zero and the middle needle would be between the 1 and the 2.
- Answer (C) is **correct**. The altimeter has three needles. The short needle indicates 10,000-ft. intervals, the middle-length needle indicates 1,000-ft. intervals, and the long needle indicates 100-ft. intervals. In altimeter 1, the shortest needle is on 1, which indicates about 10,000 feet. The middle-length needle indicates half-way between zero and 1, which is 500 feet. This is confirmed by the longest needle on 5, indicating 500 ft., i.e., 10,500 feet.

**[7] Gleim #: 2.11.56 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. The throttle controls power output (not RPM), and the mixture controls the fuel to air ratio (not power output).
- Answer (B) is **incorrect**. The propeller blade angle changes to control the RPM.
- Answer (C) is **correct**. Airplanes equipped with controllable-pitch propellers have both a throttle control and a propeller control. The throttle controls the power output of the engine, which is registered on the manifold pressure gauge. This is a simple barometer that measures the air pressure in the engine intake manifold in inches of mercury. The propeller control regulates the engine RPM, which is registered on a tachometer.

**[8] Gleim #: 2.13.61 -- Source: PHAK Chap 6**

- Answer (A) is **correct**. Float-type carburetor systems are generally more susceptible to icing than fuel-injected engines. When there is visible moisture or high humidity and the temperature is between 20°F and 70°F, icing is possible, particularly at low power settings.
- Answer (B) is **incorrect**. Carburetor icing may occur in high humidity with no visible moisture.
- Answer (C) is **incorrect**. Fuel injection systems are less susceptible to internal icing than a carburetor system, although air intake icing is equally possible in both systems.

**[9] Gleim #: 2.4.26 -- Source: PHAK Chap 7**

- Answer (A) is **correct**. Altimeter 3 indicates 9,500 ft. because the shortest needle is near 1 (i.e., about 10,000 ft.), the middle needle is between 9 and the 0, indicating between 9,000 and 10,000 ft., and the long needle is on 5, indicating 500 feet.
- Answer (B) is **incorrect**. For 15,940 ft., the short needle would have to be between 1 and 2, the middle needle near the 6, and the large needle between the 9 and 0.
- Answer (C) is **incorrect**. For 10,950 ft., the middle needle would have to be near the 1 and the long needle would have to be between the 9 and 0.

**[10] Gleim #: 2.7.39 -- Source: AvW Chap 3**

- Answer (A) is **incorrect**. The decrease in pressure causes the altimeter to read higher, not lower, than actual altitude.
- Answer (B) is **correct**. When flying from higher pressure to lower pressure without adjusting your altimeter, the altimeter will indicate a higher than actual altitude. As you adjust an altimeter barometric setting lower, the altimeter indicates lower.
- Answer (C) is **incorrect**. The altimeter will show actual altitude only when it is set correctly.

**[11] Gleim #: 2.18.84 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. The person handpropping the airplane (not the person in the cockpit) calls out the commands.
- Answer (B) is **correct**. Because of the hazards involved in handstarting airplane engines, every precaution should be exercised. It is extremely important that a competent pilot be at the controls in the cockpit. Also, the person turning the propeller should be thoroughly familiar with the technique.
- Answer (C) is **incorrect**. The person handpropping the airplane yells “gas off, switch off, throttle closed, brakes set” before touching the propeller initially. Contact means the magnetos are on, i.e., “hot.” This is not done until starting is attempted.

**[12] Gleim #: 2.13.63 -- Source: PHAK Chap 6**

- Answer (A) is **correct**. When the temperature is between 20°F and 70°F with visible moisture or high humidity, one should be on the alert for carburetor ice. During low or closed throttle settings, an engine is particularly susceptible to carburetor icing.
- Answer (B) is **incorrect**. Icing is usually not a problem above 70°F.
- Answer (C) is **incorrect**. Icing is usually not a problem below 20°F.

**[13] Gleim #: 2.3.17 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. This is the normal operating range for this airplane (green arc).
- Answer (B) is **incorrect**. This is the entire operating range of this airplane.
- Answer (C) is **correct**. The full flap operating range is indicated by the white arc on the airspeed indicator. The airspeed indicator in Fig. 4 indicates the full flap operating range is from 60 to 100 MPH.

**[14] Gleim #: 2.15.70 -- Source: PHAK Chap 6**

- Answer (A) is **correct**. If, during a run-up at a high-elevation airport, you notice a slight roughness that is not affected by a magneto check but grows worse during the carburetor heat check, you should check the results obtained with a leaner setting of the mixture control. At a high-elevation field, the air is less dense and the application of carburetor heat increases the already too rich fuel-to-air mixture. By leaning the mixture during the run-up, the condition should improve.
- Answer (B) is **incorrect**. This mixture condition is normal at a high-elevation field. However, if after leaning the mixture a satisfactory run-up cannot be obtained, the pilot should taxi back to the flight line for a maintenance check.
- Answer (C) is **incorrect**. The question describes a symptom of an excessively rich mixture, not detonation.

**[15] Gleim #: 2.19.87 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. If there were no difference in voltage, the battery would not have or keep a full charge.
- Answer (B) is **correct**. The alternator voltage output should be slightly higher than the battery voltage to keep the battery charged. For example, a 14-volt alternator system would keep a positive charge on a 12-volt battery.
- Answer (C) is **incorrect**. If the alternator voltage output were less than the battery voltage, the battery would quickly lose its charge.

**[16] Gleim #: 2.14.69 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. When carburetor heat is applied, the fuel/air mixture becomes richer, not leaner.
- Answer (B) is **incorrect**. A drop in RPM as carburetor heat is applied is due to the less dense air and melting ice, not a lean mixture.
- Answer (C) is **correct**. When carburetor heat is applied, hot air is introduced into the carburetor. Hot air is less dense than cold air; therefore, the decrease in air density with a constant amount of fuel makes a richer mixture.

**[17] Gleim #: 2.9.47 -- Source: AAH Chap 5**

- Answer (A) is **incorrect**. Pilots should still have current information and backup electronic navigation to enhance safety.
- Answer (B) is **incorrect**. Terrain avoidance is not guaranteed solely by means of relying on advanced avionics.
- Answer (C) is **correct**. Glass cockpits are designed to decrease pilot workload, enhance situational awareness, and increase the safety margin.

**[18] Gleim #: 2.17.82 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. Higher octane fuels usually result in lower cylinder head temperatures.
- Answer (B) is **correct**. Use of fuel with lower-than-specified fuel ratings, e.g., 80 octane instead of 100, can cause many problems, including higher operating temperatures, detonation, etc.
- Answer (C) is **incorrect**. Higher-than-normal oil pressure provides better lubrication and cooling (although too high an oil pressure can break parts, lines, etc.).

**[19] Gleim #: 2.5.30 -- Source: PHAK Chap 7**

- Answer (A) is **correct**. Density altitude is the pressure altitude corrected for nonstandard temperature.
- Answer (B) is **incorrect**. It is indicated altitude.
- Answer (C) is **incorrect**. It defines pressure altitude.

**[20] Gleim #: 2.14.67 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. Carburetor heat decreases (not increases) engine performance.
- Answer (B) is **correct**. Use of carburetor heat tends to decrease the engine performance and also to increase the operating temperature. Warmer air is less dense, and engine performance decreases with density. Thus, carburetor heat should not be used when full power is required (as during takeoff) or during normal engine operation except as a check for the presence or removal of carburetor ice.
- Answer (C) is **incorrect**. Carburetor heat does have an effect on performance.

**[21] Gleim #: 2.17.80 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. All drains, not just the fuel strainer, should be checked for water.
- Answer (B) is **correct**. One should purge water from both the fuel strainer drain and all the fuel tank sumps on an airplane. This is the purpose of such drains. They are placed at low areas of the fuel system and should be drained prior to each flight.
- Answer (C) is **incorrect**. All fuel drains and sumps, not just the lowest point in the system, should be checked for water.

**[22] Gleim #: 2.12.60 -- Source: PHAK Chap 6**

- Answer (A) is **incorrect**. The magneto may continue to fire if the ignition switch ground wire is disconnected.
- Answer (B) is **correct**. Loose or broken wires in the ignition system can cause problems. For example, if the ignition switch is OFF, the magneto may continue to fire if the ignition switch ground wire is disconnected. If this occurs, the only way to stop the engine is to move the mixture lever to the idle cut-off position, then have the system checked by a qualified aviation maintenance technician.
- Answer (C) is **incorrect**. The magneto may continue to fire if the ignition switch ground wire is disconnected.

**[23] Gleim #: 2.3.20 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. This is the upper limit of the green arc, which is the maximum structural cruising speed.
- Answer (B) is **incorrect**. This is the lower limit of the green arc, which is the power-off stall speed in a specified configuration.
- Answer (C) is **correct**. The maximum flaps-extended speed is indicated by the upper limit of the white arc. This is the highest airspeed at which a pilot should extend full flaps. At higher airspeeds, severe strain or structural failure could result. The upper limit of the white arc on the airspeed indicator shown in Fig. 4 indicates 100 MPH.

**[24] Gleim #: 2.16.73 -- Source: PHAK Chap 6**

- Answer (A) is **correct**. Detonation occurs when the fuel/air mixture in the cylinders explodes instead of burning normally. This more rapid force slams the piston down instead of pushing it.
- Answer (B) is **incorrect**. If the spark plugs are “fouled” or the wiring is defective, the cylinders would not be firing; i.e., there would be no combustion.
- Answer (C) is **incorrect**. Hot spots in the combustion chamber igniting the fuel/air mixture in advance of normal ignition is pre-ignition.

**[25] Gleim #: 2.5.28 -- Source: PHAK Chap 7**

- Answer (A) is **incorrect**. It is pressure altitude.
- Answer (B) is **incorrect**. It is indicated altitude.
- Answer (C) is **correct**. Absolute altitude is altitude above the surface, i.e., AGL.

Gleim FAA Test Prep: Private Pilot
Answer Key
(25 Questions)
Aero Advantage

1) C
2) A
3) B
4) C
5) C
6) C
7) C
8) A
9) A
10) B
11) B
12) A
13) C
14) A
15) B
16) C
17) C
18) B
19) A
20) B
21) B
22) B
23) C
24) A
25) C

Gleim FAA Test Prep: Private Pilot
Answer Sheet
(25 Questions)
Aero Advantage

1) Ⓐ Ⓑ Ⓒ
2) Ⓐ Ⓑ Ⓒ
3) Ⓐ Ⓑ Ⓒ
4) Ⓐ Ⓑ Ⓒ
5) Ⓐ Ⓑ Ⓒ
6) Ⓐ Ⓑ Ⓒ
7) Ⓐ Ⓑ Ⓒ
8) Ⓐ Ⓑ Ⓒ
9) Ⓐ Ⓑ Ⓒ
10) Ⓐ Ⓑ Ⓒ
11) Ⓐ Ⓑ Ⓒ
12) Ⓐ Ⓑ Ⓒ
13) Ⓐ Ⓑ Ⓒ
14) Ⓐ Ⓑ Ⓒ
15) Ⓐ Ⓑ Ⓒ
16) Ⓐ Ⓑ Ⓒ
17) Ⓐ Ⓑ Ⓒ
18) Ⓐ Ⓑ Ⓒ
19) Ⓐ Ⓑ Ⓒ
20) Ⓐ Ⓑ Ⓒ
21) Ⓐ Ⓑ Ⓒ
22) Ⓐ Ⓑ Ⓒ
23) Ⓐ Ⓑ Ⓒ
24) Ⓐ Ⓑ Ⓒ
25) Ⓐ Ⓑ Ⓒ