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Bank: (Flight and Ground Instructor)

Airman Knowledge Test Question Bank

The FAA computer-assisted testing system is supported by a series of supplement publications. These publications, available through several aviation publishers, include the graphics, legends, and maps that are needed to successfully respond to certain test items. Use the following URL to download a complete list of associated supplement books:

http://www.faa.gov/training_testing/testing/airmen/test_questions/

The Learning Statement Reference Guide for Airman Knowledge Testing contains listings of learning statements with their associated codes. It can be located at: http://www.faa.gov/training_testing/testing/airmen/media/LearningStatementReferenceGuide.pdf

1 PLT238 CFI

Aspect ratio of a wing is defined as the ratio of the

- A) wingspan to the wing root.
- B) wingspan to the mean chord.
- C) square of the chord to the wingspan.

2 PLT238 CFI

At a constant velocity in airflow, a high aspect ratio wing will have (in comparison with a low aspect ratio wing)

- A) increased drag, especially at a low angle of attack.
- B) decreased drag, especially at a high angle of attack.
- C) increased drag, especially at a high angle of attack.

3 PLT470 CFI

Rotor blade flapping action is

- A) an undesirable reaction to changes in airspeed and blade angle of attack.
- B) an aerodynamic reaction to high speed flight and cannot be controlled by the pilot.
- C) a design feature permitting continual changes in the rotor blade angle of attack, compensating for dissymmetry of lift.

4 PLT199 CFI

During flight, if you apply cyclic control pressure which results in a decrease in pitch angle of the rotor blades at a position approximately 90° to your left, the rotor disc will tilt

- A) aft.
- B) left.

C) right.

5 PLT470 CFI

The forward speed of a rotorcraft is restricted primarily by

- A) dissymmetry of lift.
- B) transverse flow effect.
- C) high-frequency vibrations.

6 PLT168 CFI

The angle of attack of a wing directly controls the

- A) angle of incidence of the wing.
- B) amount of airflow above and below the wing.
- C) distribution of positive and negative pressure acting on the wing.

7 PLT470 CFI

Gyroplanes that use small wings will cause rotor drag to do what at higher cruise airspeeds?

- A) Increase.
- B) Decrease.
- C) Remain the same.

8 PLT470 CFI

Rotor torque is a concern in gyroplanes only during

- A) prerotation or clutch engagement.
- B) maneuvers requiring high rotor rpm.
- C) maximum performance climbs and go-arounds requiring higher engine rpm.

9 PLT245 CFI

What is the effect of center of gravity on the spin characteristics of a fixed-wing aircraft? If the CG is too far

- A) aft, a flat spin may develop.
- B) forward, spin entry will be difficult.
- C) aft, spins can become high-speed spirals.

10 PLT132 CFI

In a twin-engine airplane, the single-engine service ceiling is the maximum density altitude at which VYSE will produce

- A) 50 feet per minute rate of climb.
- B) 100 feet per minute rate of climb.
- C) 500 feet per minute rate of climb.

11 PLT008 CFI

(Refer to figure 31.) What is the total landing distance over a 50-foot obstacle?

- A) 1,250 feet.
- B) 1,175 feet.
- C) 1,050 feet.

12 PLT074 CFI

(Refer to figure 17.) The airspeed indicated by point A is

- A) maneuvering speed.
- B) normal stall speed.
- C) maximum structural cruising speed.

13 PLT123 CFI

How does temperature and weight affect the V_{ne} of a helicopter?

- A) V_{ne} increases as temperature and weight increase.
- B) V_{ne} decreases as temperature and weight increase.
- C) V_{ne} decreases as temperature increases and weight decreases.

14 PLT013 CFI

(Refer to figure 30.) Using a maximum demonstrated crosswind component equal to 0.2 VSO, what is a pilot able to determine?

- A) Headwind component exceeds recommended limits.
- B) Crosswind component is within safe limits.
- C) Maximum demonstrated crosswind component is exceeded.

15 PLT124 CFI

Performance of a helicopter can be determined by

- A) knowing the density altitude, gross weight, and surface wind.
- B) the formula π times the rotor diameter divided by the blade area.
- C) the highest altitude that can be maintained in a hover following liftoff.

16 PLT215 CFI

What should be the indication on the magnetic compass as you roll into a standard rate turn to the right from a south heading in the Northern Hemisphere?

- A) The compass will initially indicate a turn to the left.
- B) The compass will indicate a turn to the right, but at a faster rate than is actually occurring.
- C) The compass will remain on south for a short time, then gradually catch up to the magnetic heading of the airplane.

17 PLT023 CFI

What is true altitude?

- A) The vertical distance of the aircraft above sea level.
- B) The vertical distance of the aircraft above the surface.
- C) The height above the standard datum plane.

18 PLT336 CFI

Which instrument provides the most pertinent information (primary) for pitch control in straight-and-level flight?

- A) Vertical speed indicator.
- B) Attitude indicator.
- C) Altimeter.

19 PLT478 CFI

If the ground wire between the magneto and the ignition switch becomes disconnected, the most noticeable result will be that the engine

- A) will run very rough.
- B) cannot be started with the switch in the ON position.
- C) cannot be shut down by turning the switch to the OFF position.

20 PLT253 CFI

When the pilot leans the mixture control, what is being accomplished?

- A) The volume of air entering the carburetor is being reduced.
- B) The volume of air entering the carburetor is being increased.
- C) The amount of fuel entering the combustion chamber is being reduced.

21 PLT351 CFI

The reason for variations in geometric pitch (twisting) along a propeller blade is that it

- A) prevents the portion of the blade near the hub to stall during cruising flight.
- B) permits a relatively constant angle of attack along its length when in cruising flight.
- C) permits a relatively constant angle of incidence along its length when in cruising flight.

22 PLT347 CFI

On a multiengine airplane, where the propellers rotate in the same direction, why is the loss of power on one engine more critical than the loss of power on the other engine?

- A) The corkscrew pattern of airflow from one propeller is less effective against the airflow from the critical engine.
- B) The torque reaction from operation of the critical engine is more severe around the vertical axis as well as the longitudinal axis.
- C) The asymmetric propeller thrust or P-factor results in the center of thrust from one engine being farther from the airplane centerline than the

center of thrust from the other engine.

23 PLT141 CFI

What does a destination sign identify?

- A) Entrance to the runway from a taxiway.
- B) Direction to takeoff runways.
- C) Runway on which an aircraft is located.

24 PLT141 CFI

What is the purpose of the runway hold position sign?

- A) Denotes entrance to a runway from a taxiway.
- B) Denotes area protected for an aircraft approaching or departing a runway.
- C) Denotes taxiway location.

25 PLT112 CFI

To taxi on the surface in a safe efficient manner, one should use the cyclic pitch to

- A) control taxi speed.
- B) maintain heading during crosswind conditions.
- C) correct for drift during crosswind conditions.

26 PLT149 CFI

Which is true concerning taxi procedures in a gyroplane?

- A) In ideal conditions, taxi speed should be limited to no faster than a brisk walk.
- B) Cyclic stick should be positioned slightly aft of neutral when taxiing.
- C) Rotor blades should not be turning when taxiing over a rough surface.

27 PLT146 CFI

(Refer to figure 54.) The segmented circle indicates that the airport traffic pattern is

- A) left-hand for Rwy 17 and right-hand for Rwy 35.
- B) right-hand for Rwy 35 and right-hand for Rwy 9.
- C) left-hand for Rwy 35 and right-hand for Rwy 17.

28 PLT150 CFI

The recommended entry position to an airport traffic pattern is

- A) 45° to the base leg just below traffic pattern altitude.
- B) to enter 45° at the midpoint of the downwind leg at traffic pattern altitude.
- C) to cross directly over the airport at traffic pattern altitude and join the downwind leg.

29 PLT509 CFI

During a takeoff made behind a departing large jet airplane, the pilot can minimize the hazard of wingtip vortices by

- A) remaining below the jet's flightpath until able to turn clear of its wake.
- B) extending the takeoff roll and not rotating until well beyond the jet's rotation point.
- C) being airborne prior to reaching the jet's flightpath until able to turn clear of its wake.

30 PLT040 CFI

(Refer to figure 47.) Which altitude (box 1) is applicable to the vertical extent of the surface and shelf areas of this Class C airspace?

- A) 3,000 feet AGL.
- B) 3,000 feet above airport.
- C) 4,000 feet above airport.

31 PLT161 CFI

Normally, the vertical limits of Class D airspace extend up to and including how many feet above the surface?

- A) 2,500 feet.
- B) 3,000 feet.
- C) 4,000 feet.

32 PLT125 CFI

During a flare autorotative descent and landing, additional right pedal is required to maintain heading after initial collective pitch is applied. This action is necessary because of

- A) gyroscopic precession.
- B) the reduction in rotor RPM.
- C) translating tendency of helicopters during autorotation.

33 PLT208 CFI

Which pilot action will help reduce pilot induced oscillation in a gyroplane?

- A) Avoid flight at high speeds.
- B) Increase power if nose pitches down.
- C) Prior to a climb, increase pitch attitude before increasing power.

34 PLT208 CFI

What action should be taken if the antitorque system fails during forward flight?

- A) Immediately apply additional throttle while slightly lowering the collective.
- B) Enter a normal autorotation by lowering the collective and rolling off the throttle.
- C) Immediately and smoothly apply aft cyclic.

35 PLT244 CFI

If poor aircraft controllability is experienced during an emergency go-around with full flaps, the cause is most probably due to

- A) excessive airspeed with full flaps extended.
- B) the high-power, low-air-speed situation with the airplane trimmed for a full-flap configuration.
- C) a reduction in the angle of attack with full flaps to the point where the aircraft control is greatly impaired.

36 PLT304 CFI

During a ground launch, how is the airspeed of a glider increased?

- A) Raise the nose.
- B) Lower the nose.
- C) Increase speed of vehicle or winch.

37 PLT217 CFI

The proper action to initiate a rapid deceleration is to apply

- A) forward cyclic while raising the collective and applying right pedal.
- B) left cyclic while raising the collective and applying left pedal.
- C) aft cyclic while lowering the collective and applying right pedal.

38 PLT222 CFI

In order to maintain level flight (laterally) as airspeed increases on climbout after takeoff in a gyroplane, the pilot will need to increase

- A) rudder pressure to the left.
- B) cyclic pressure to the right.
- C) rudder and cyclic pressure to the left.

39 PLT219 CFI

Two distinct flight situations should be covered when teaching slow flight. These are the establishment and maintenance of airspeeds appropriate for landing approaches, and flight at reduced airspeeds.

- A) an airspeed which gives a stall warning indication, and an airspeed at which complete recovery can be made from stalls.
- B) an airspeed at which the airplane is operating on the back side of the power curve, and an airspeed at which the elevator control can be held
- C) full-back with no further loss of control.

40 PLT258 CFI

(Refer to figure 49.) The angle of bank will be most nearly equal in which positions?

- A) 3 and 7.
- B) 1 and 5.
- C) 4 and 6.

41 PLT223 CFI

Which is true regarding the operation of a multiengine airplane with one engine inoperative?

- A) Banking toward the operating engine increases VMC.
- B) Banking toward the inoperative engine increases VMC.
- C) VMC is a designed performance factor which must be proven during type certification and will not change as long as the ball is centered with appropriate rudder pressure.

42 PLT257 CFI

When flying into a strong headwind on a long glide back to the airport, the recommended speed to use is the

- A) best glide speed.
- B) minimum sink speed.
- C) best lift/drag speed plus half the estimated windspeed at the glider's flight altitude.

43 PLT486 CFI

When explaining the techniques used for making short- and soft-field takeoffs, it would be correct to state that

- A) during soft-field takeoffs, lift-off should be made as soon as possible.
- B) during soft-field takeoffs, lift-off should be made only when best angle-of-climb speed is attained.
- C) during short-field takeoffs, lift-off should be attempted only after best rate-of-climb speed is attained.

44 PLT232 CFI

All experienced pilots have fallen prey to, or have been tempted by, one or more of these dangerous tendencies or behavior problems at some time in their career. Select the answer that best describes these tendencies.

- A) Deficiencies in instrument skills and knowledge of aircraft systems or limitations.
- B) Peer pressure, loss of situational awareness, and operating with inadequate fuel reserves.
- C) Performance deficiencies due to stress from human factors, such as fatigue, illness, or emotional problems.

45 PLT022 CFI

Risk management, as part of the aeronautical decision making (ADM) process, relies on which features to reduce the risks associated with each flight?

- A) Application of stress management and risk element procedures.
- B) Situational awareness, problem recognition, and good judgment.
- C) The mental process of analyzing all information in a particular situation and making a timely decision on what action to take.

46 PLT194 CFI

Which technique should a student be taught to scan for traffic to the right and left during straight-and-level flight?

- A) Continuous sweeping of the windshield from right to left.

- B) Concentrate on relative movement detected in the peripheral vision area.
- C) Systematically focus on different segments of the sky for short intervals.

47 PLT333 CFI

One aid in increasing night vision effectiveness would be to

- A) look directly at objects.
- B) force the eyes to view off center.
- C) increase intensity of interior lighting.

48 PLT211 CFI

Practical tests for pilot certification are

- A) norm-referenced.
- B) criterion-referenced.
- C) evaluation-referenced.

49 PLT482 CFI

Which would more likely result in students becoming frustrated?

- A) Giving the students meaningless praise.
- B) Telling students their work is unsatisfactory with no explanation.
- C) An instructor freely admitting mistakes causing lack of trust.

50 PLT012 CFI

(Refer to figure 40.) The line from point A to point B of the wind triangle represents

- A) true heading and airspeed.
- B) true course and groundspeed.
- C) groundspeed and true heading.

51 PLT012 CFI

If a true heading of 135° results in a ground track of 130° and a true airspeed of 135 knots results in a groundspeed of 140 knots, the wind would be from

- A) 019° and 12 knots.
- B) 200° and 13 knots.
- C) 246° and 13 knots.

52 PLT012 CFI

On a cross-country flight, point A is crossed at 1500 hours and the plan is to reach point B at 1530 hours. Use the following information to determine the indicated airspeed required to reach point B on schedule.

- A) 126 knots.
- B) 137 knots.
- C) 152 knots.

53 PLT225 CFI

If an aircraft has a transponder, encoding altimeter, and DME, the proper equipment suffix to be entered on a flight plan is

- A) A.
- B) R.
- C) U.

54 PLT078 CFI

Information concerning parachute jumping sites may be found in the

- A) NOTAM's.
- B) Airport/Facility Directory.
- C) Graphic Notices and Supplemental Data.

55 PLT014 CFI

If you are 30 miles from the NDB transmitter and the ADF indicates 3° off course, how many miles off course are you?

- A) 1.5.
- B) 3.
- C) 6.

56 PLT014 CFI

The ADF indicates a 5° wingtip bearing change in 2.5 minutes' elapsed time. If the true airspeed is 125 knots, the distance to the station would be

- A) 31.2 NM.
- B) 56.5 NM.
- C) 62.5 NM.

57 PLT014 CFI

While maintaining a magnetic heading of 060° and a true airspeed of 130 knots, the 150° radial of a VOR is crossed at 1137 and the 140° radial at 1145. The approximate time and distance to the station would be

- A) 38 minutes and 82 NM.
- B) 42 minutes and 91 NM.
- C) 48 minutes and 104 NM.

58 PLT113 CFI

If the certification category of an airplane is listed as 'utility,' it means the airplane is intended for which maneuvers?

- A) Any type of acrobatic maneuver.
- B) All nonacrobatic maneuvers plus limited acrobatics including spins.
- C) Any maneuver incident to normal flying except acrobatics or spins.

59 PLT395 CFI

Which is a definition of the term 'crewmember'?

- A) A person assigned to perform duty in an aircraft during flight time.
- B) Any person assigned to duty in an aircraft during flight except a pilot or flight engineer.
- C) Only a pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.

60 PLT432 CFI

Regulations concerning the operational control of a flight refer to

- A) the specific duties of any required crewmember.
- B) exercising the privileges of pilot in command of an aircraft.
- C) exercising authority over initiating, conducting, or terminating a flight.

61 PLT484 CFI

Which is the correct symbol for the minimum steady flight speed at which an airplane is controllable?

- A) V_s .
- B) V_{s1} .
- C) V_{so} .

62 PLT418 CFI

An applicant has failed a knowledge test for the second time. With training and an endorsement from an authorized instructor, when may the applicant apply for a retest?

- A) immediately.
- B) After 5 days.
- C) After 30 days.

63 PLT448 CFI

A student pilot may not operate a balloon in initial solo flight unless that pilot has

- A) received a minimum of 5 hours flight instruction in a balloon.
- B) a valid Student Pilot Certificate and logbook endorsement by an authorized flight instructor.
- C) made at least 10 balloon flights under the supervision of an authorized flight instructor.

64 PLT448 CFI

What action may be taken against a person whom the Administrator finds has cheated on a knowledge test?

- A) Any certificate or rating held by the person may be suspended or revoked.
- B) That person will be required to wait 24 months before taking another knowledge test.
- C) That person may be required to wait a maximum of 6 months before applying for any other certificate or rating.

65 PLT508 CFI

If an ATC transponder installed in an aircraft has not been tested, inspected, and found to comply with regulations within a specified period, what is the limitation on its use?

- A) Its use is not permitted.
- B) It may be used anywhere except in Class A and B airspace.
- C) It may be used for VFR flight but not for IFR flight.

66 PLT372 CFI

An aircraft's last annual inspection was performed on July 12, this year. The next annual inspection will be due no later than

- A) July 13, next year.
- B) July 31, next year.
- C) 12 calendar months after the date shown on the Airworthiness Certificate.

67 PLT052 CFI

What is the correct departure procedure at a noncontrolled airport?

- A) The FAA-approved departure procedure for that airport.
- B) Make all left turns, except a 45° right turn on the first crosswind leg.
- C) Departure in any direction consistent with safety, after crossing the airport boundary.

68 PLT161 CFI

While in Class E airspace in VFR conditions, what in-flight visibility is required when flying more than 1,200 feet AGL and at or above 10,000 feet MSL?

- A) 5 SM.
- B) 3 SM.
- C) 1 SM.

69 PLT388 CFI

Information recorded during normal operation by a required cockpit voice recorder in a passenger-carrying airplane

- A) may be erased only once each flight.
- B) may all be erased except the last 30 minutes.
- C) must be retained for 30 minutes after landing.

70 PLT407 CFI

Under FAR Part 61, a commercial pilot-airplane applicant is required to have a minimum of how much cross-country experience?

- A) 30 hours.
- B) 40 hours.
- C) 50 hours.

71 PLT208 CFI

How long may an aircraft be operated after the emergency locator transmitter has been initially removed for maintenance?

- A) 90 days.
- B) 30 days.
- C) 7 days.

72 PLT447 CFI

A Third-Class Medical Certificate was issued on May 3 to a person over 40 years of age. To exercise the privileges of a Private Pilot Certificate, the medical certificate will be valid through

- A) May 3, 24 months later.
- B) May 31, 24 months later.
- C) May 31, 36 months later.

73 PLT430 CFI

What is the minimum altitude and flight visibility required for acrobatic flight?

- A) 1,500 feet AGL and 5 miles.
- B) 1,500 feet AGL and 3 miles.
- C) 3,000 feet AGL and 3 miles.

74 PLT442 CFI

If recency of experience requirements for night flight are not met and official sunset is 1830, the latest time passengers may be carried is

- A) 1829.
- B) 1859.
- C) 1929.

75 PLT407 CFI

An applicant who is seeking a Student Pilot Certificate limited to helicopters is required to be at least how old?

- A) 16 years.
- B) 17 years.
- C) 18 years.

76 PLT068 CFI

(Refer to figure 14.) How are Significant Weather Prognostic Charts best used by a pilot?

- A) For overall planning at all altitudes.
- B) For determining areas to avoid (freezing levels and turbulence).
- C) For analyzing current frontal activity and cloud coverage.

77 PLT072 CFI

Vertical visibility is shown on Terminal Aerodrome Forecasts (TAF) reports when the sky is

- A) overcast.
- B) obscured.
- C) partially obscured.

78 PLT286 CFI

Which weather chart depicts the conditions forecast to exist at a specific time in the future?

- A) Prognostic.
- B) Surface Analysis.
- C) Weather Depiction.

79 PLT071 CFI

The position of fronts and pressure systems (as of chart time) is best determined by referring to a

- A) Surface Analysis Chart.
- B) Radar Summary Chart.
- C) Weather Depiction Chart.

80 PLT495 CFI

What are the minimum requirements for the formation of a thunderstorm?

- A) Sufficient moisture and a lifting action.
- B) Sufficient moisture, an unstable lapse rate, and lifting action.
- C) Towering cumulus clouds, sufficient moisture, and a frontal zone.

81 PLT511 CFI

What type weather is associated with an advancing warm front that has moist, unstable air?

- A) Stratiform clouds, lightning, steady precipitation.
- B) Cumuliform clouds, smooth air, steady precipitation.
- C) Cumuliform clouds, turbulent air, showery-type precipitation.

82 PLT510 CFI

Which statement is true regarding high- or low-pressure systems?

- A) A high-pressure area or ridge is an area of rising air.
- B) A low-pressure area or trough is an area of rising air.
- C) A high-pressure area is a trough of descending air.

83 PLT206 CFI

An aircraft is flying at a constant power setting and constant indicated altitude. If the outside air temperature (OAT) decreases, true airspeed will

- A) decrease, and true altitude will decrease.
- B) increase, and true altitude will increase.
- C) increase, and true altitude will decrease.

84 PLT344 CFI

You may anticipate fog when the temperature-dew point spread is

- A) 15 °F or less and decreasing.
- B) 15 °F or more and increasing.
- C) 5 °F or less and decreasing

85 PLT501 CFI

When soaring in the vicinity of mountain ranges, the greatest potential danger from vertical and rotor-type currents will usually be encountered on the

- A) leeward side when flying with the wind.
- B) leeward side when flying into the wind.
- C) windward side when flying into the wind.

86 PLT203 CFI

The average lapse rate in the troposphere is

- A) 2.0° C per 1,000 feet.
- B) 3.0° C per 1,000 feet.
- C) 5.4° C per 1,000 feet.

87 PLT021 CFI

(Refer to figure 32.) How should the 500-pound weight be shifted to balance the plank on the fulcrum?

- A) 10 inches to the left.
- B) 10 inches to the right.
- C) 30 inches to the right.