PRACTICE EXAM 4: FULL CFI SIMULATION (Q1–Q150)

FOI BLOCK — Q1–Q50

1. A student who has just received a particularly harsh critique from an unrelated instructor arrives for a lesson, performs poorly throughout, and is barely able to recall the maneuvers practiced the previous week. The instructor most accurately identifies the student's compromised state as operating at which level of the hierarchy of needs?

A. Security level, where the perceived threat is interfering with higher-order learning

B. Self-actualization level, where the student is striving to realize full potential

C. Esteem level, where peer recognition has been temporarily diminished

D. Physiological level, where basic rest and nourishment are lacking

2. A student returns to a maneuver they botched on the previous lesson and insists, contrary to the recorded debrief, that "it actually went fine last time." The defense mechanism most clearly at work is:

A. Denial, in which the student refuses to accept an uncomfortable reality

B. Compensation, in which a strength elsewhere is emphasized

C. Rationalization, in which a plausible but false reason is substituted

D. Reaction formation, in which the student feigns the opposite emotion

3. A flight instructor delivers a critique using a sharp, dismissive tone. The student's perception narrows visibly and subsequent maneuvers degrade. The most direct instructional principle at work is that:

A. The law of recency favors negative material delivered most recently

B. Negative motivation is more durable than positive motivation

C. A perceived element of threat narrows perception and blocks learning

D. Compensation will protect the student's performance through the lesson

4. A student demonstrates the ability to recite engine-fire memory items word-for-word but cannot adapt the response when the instructor introduces a slight variation in the scenario. The student's knowledge has reached:

A. Memorization, the shallowest level of knowledge

B. Understanding, in which the meaning of each step is grasped

C. Insight, in which connections among steps are made

D. Concept formation, in which broad principles are applied

5. Of the laws of learning, the one that explains why ending a frustrating lesson on a genuine success leaves the student willing to return is the law of:

A. Effect, since learning is strengthened by pleasant feelings

B. Primacy, since first impressions create lasting habits

C. Recency, since material learned last is best remembered

D. Intensity, since vivid experiences teach more than dull ones

6. A student performs a procedure exactly as intended but the intention reflects a wrong underlying concept. The error is best classified as a:

A. Slip, requiring additional supervised practice

B. Lapse, caused by momentary distraction

C. Mistake, requiring re-teaching of the underlying concept

D. Reflex, caused by overlearned response

7. A student who has mastered cruise pitch-power-airspeed quickly grasps approaches and landings. This illustrates:

A. Negative transfer, in which prior learning interferes with new learning

B. Repression, in which the mind suppresses unwelcome material

C. The law of recency operating alone without other principles

D. Positive transfer, in which prior learning aids new learning

8. A student returns from a frightening encounter with severe turbulence and afterward cannot recall the recovery actions they had demonstrated competently the previous week. The most likely cause is:

A. A medical condition requiring immediate evaluation

B. Lack of motivation for the topic of turbulence

C. The law of exercise weakening through brief lack of use

D. Repression, in which the mind suppresses unpleasant material

9. Of the three domains of learning, the one that addresses values, attitudes, and the safety-critical responses an aviator must hold is the:

A. Cognitive domain, which covers intellectual knowledge

B. Procedural domain, which covers checklist execution

C. Affective domain, which covers attitudes and values

D. Psychomotor domain, which covers physical coordination

10. Short-term (working) memory is best characterized as having:

A. Limited capacity that is easily overloaded by lengthy briefings

B. Unlimited capacity, comparable to long-term memory in scope

C. The capacity to hold indefinite items for hours at a time

D. A capacity that grows automatically as the student gains experience

11. Of the recognized theories of forgetting, the one most consistent with new material crowding out earlier learning is:

A. Disuse, in which unused material fades from memory over time

B. Decay, in which memory weakens through chemical processes

C. Interference, in which new learning crowds out earlier learning

D. Repression, in which the mind suppresses threatening material

12. Effective communication has succeeded only when:

A. The instructor has used the correct technical terminology

B. The meaning received matches the meaning intended by the instructor

C. The student has acknowledged that the message has been heard

D. The instructor has delivered the message with adequate volume

13. The single greatest barrier to communication between an instructor and a beginner is:

A. Lack of common experience between the two parties

B. The instructor's regional accent or speech patterns

C. The use of technical checklists during preflight briefings

D. The instructor's age relative to the student

14. Of the recognized teaching methods, the one best suited to delivering a large body of factual information efficiently to a group is the:

A. Teaching lecture, particularly with deliberate audience involvement

B. Pure scenario-based training with no other elements present

C. Demonstration-performance method applied to physical skills

D. Student-led discovery method without instructor guidance

15. The demonstration-performance method proceeds through which recognized sequence of phases?

A. Performance, demonstration, evaluation, explanation

B. Explanation, demonstration, student performance with supervision, evaluation

C. Evaluation, demonstration, performance, explanation

D. Application, evaluation, explanation, demonstration

16. Scenario-based training (SBT) is best described as:

A. A grading rubric used during the practical test only

B. A lecture format using printed scenarios as visual aids

C. A pure memorization technique applied to checklists

D. A specific form of problem-based learning organized around a realistic flight scenario

17. Integrated flight instruction is the practice of teaching maneuvers:

A. Only by reference to flight instruments until proficiency is achieved

B. Only by outside visual reference until proficiency is achieved

C. With no visual reference at all, relying purely on student intuition

D. Both by outside visual reference and by reference to flight instruments from the start

18. Of the recognized teaching methods, the one that develops student understanding by drawing knowledge out through skillful questioning is the:

A. Pure lecture method

B. Demonstration-performance method

C. Guided discussion method

D. Passive video review method

19. A flight instructor preparing a guided discussion on weather decision-making must anticipate the directions the discussion may take, primarily because:

A. The discussion will eliminate the need for any later assessment

B. The students will require no prior reading on the topic

C. The instructor will use less time than during a lecture format

D. The instructor must be ready with questions to steer the exchange

20. An instructional aid is properly used when it:

A. Supports the lesson's objective and supplements the instructor's teaching

B. Replaces the instructor's verbal teaching for the duration of the lesson

C. Demonstrates the instructor's technical sophistication to the student

D. Allows the instructor to remain silent throughout the entire lesson

21. The four steps of the teaching process applicable at every scale of instruction are:

A. Demonstration, lecture, performance, certification

B. Introduction, development, summary, final examination

C. Preparation, presentation, application, assessment

D. Briefing, flying, debriefing, logbook entry

22. A performance-based objective specifies what the student will be able to do, under what conditions, and to what:

A. Cost in training fees required for the lesson

B. Estimated duration of the lesson from start to finish

C. Criterion that defines acceptable performance to standard

D. Number of students participating in the lesson

23. A course of training is most effectively built by:

A. Following the calendar regardless of student progress

B. Allowing the instructor's interests to drive topic order

C. Allowing the student to choose the next topic each lesson

D. Identifying blocks of learning and sequencing them logically

24. A training syllabus differs from a rigid script in that it:

A. Eliminates the need for any documentation of training progress

B. Is identical for every student in every course of training

C. Requires FAA approval before each lesson can be conducted

D. Allows the instructor to adapt pace and sometimes sequence to the student

25. Within a single lesson, the conclusion exploits which recognized law of learning?

A. The law of primacy, planting first impressions

B. The law of intensity, requiring a dramatic finish

C. The law of recency, since what is learned last is best remembered

D. The law of exercise, requiring extended practice

26. A low-threat learning environment is best characterized as one in which:

A. The student feels safe enough to attempt, err, and be corrected

B. There are no standards, rules, or required completion criteria

C. The student is permitted to skip difficult portions of the lesson

D. Critique and correction are eliminated to protect feelings

27. Formative assessment is most accurately described as assessment that:

A. Replaces the need for any other type of assessment in training

B. Certifies that the student has reached the standard at a milestone

C. Occurs during instruction and is used to shape ongoing learning

D. Is conducted only by an FAA examiner during the practical test

28. Of the recognized question types in oral evaluation, the type best suited to assessing the depth of a student's understanding is the:

A. Toss-up question thrown to the group at large

B. Yes-or-no question accepted at face value

C. Follow-up question that probes deeper after the initial answer

D. Trick question designed to confuse the student

29. The Airman Certification Standards (ACS) integrate which three elements within each task?

A. Performance, attitude, and presentation under evaluation

B. Knowledge, risk management, and skill

C. Memorization, recall, and recognition under exam conditions

D. Lecture content, demonstration, and grading by the examiner

30. ACS codes on the Airman Knowledge Test Report are most directly used by the practical test examiner to:

A. Identify topics that must be revisited during the oral portion

B. Determine the fee charged for the practical test sitting

C. Decide whether to allow the practical test to occur at all

D. Set the standard for grading the practical test maneuvers

31. A flight instructor's endorsement on a student's logbook for the practical test is best understood as:

A. An informal opinion offered as a courtesy without legal force

B. A formal certification that the applicant meets the required standard

C. A request that the examiner be lenient with the applicant

D. A summary of how the applicant performed on the most recent stage check

32. A flight instructor who issues a premature endorsement to please a student or to keep a schedule is most directly:

A. Acting in the student's true interest by accelerating progression

B. Breaching the trust the instructor's certificate represents

C. Operating within the bounds of professional discretion

D. Demonstrating effective customer service to the school

33. Of the recognized assessment methods in flight training, the one that best prepares the student for the lifelong skill of evaluating their own flying without an instructor is:

A. Instructor-only critique with no student participation

B. Peer assessment by other primary students

C. Written tests scored only by the instructor

D. Student self-assessment, conducted with instructor guidance

34. A flight instructor's signature on a logbook endorsement legally indicates that the instructor has:

A. Heard from another instructor that the student appears ready

B. Discussed the matter with the chief flight instructor

C. Informally observed the student over several lessons

D. Personally determined the student meets the conditions specified

35. A flight instructor's professional development obligations extend:

A. Only to instructors employed at Part 141 schools, not Part 61

B. Throughout the instructor's career as the field evolves

C. Only to the period before the first practical test endorsement

D. Only to the year immediately after initial certification

36. The PAVE framework identifies risk across four categories. The four are:

A. Performance, altitude, velocity, energy state

B. Pilot, aircraft, enVironment, External pressures

C. Procedures, airspace, visibility, equipment

D. Passengers, avionics, ventilation, engineering

37. Aeronautical decision-making (ADM) is best described as:

A. An optional add-on course for commercial pilots only

B. A regulation requiring documentation before every flight

C. A maneuver evaluated only during the practical test

D. A systematic approach to consistently determining the best course of action

38. The five hazardous attitudes recognized by the FAA are anti-authority, impulsivity, invulnerability, macho, and:

A. Curiosity, marked by interest in unfamiliar situations

B. Optimism, marked by a generally positive outlook

C. Resignation, marked by helplessness in difficult situations

D. Frustration, marked by emotional response to failure

39. The hazardous attitude expressed by the thought "It won't happen to me" is best identified as:

A. Anti-authority, marked by resistance to rules

B. Macho, marked by a desire to demonstrate capability

C. Resignation, marked by a sense of helplessness

D. Invulnerability, marked by discounting personal risk

40. The antidote to the hazardous attitude of impulsivity ("do something quickly") is:

A. "Follow the rules. They are usually right."

B. "Taking chances is foolish."

C. "I'm not helpless. I can make a difference."

D. "Not so fast. Think first."

41. Single-pilot resource management (SRM) is best described as:

A. A regulation requiring two pilots on commercial flights

B. The art of managing all resources available to a pilot operating alone

C. A maneuver evaluated only during the multi-engine practical test

D. An optional course offered only to airline transport pilots

42. A flight instructor who consistently models discipline with checklists, weather, and personal minimums is teaching primarily in which domain of learning?

A. The cognitive domain only, where knowledge is stored

B. The affective domain, where attitudes and habits are formed

C. The procedural domain, where checklists are executed

D. The psychomotor domain only, where skills are developed

43. Of the hazards unique to providing flight instruction, the one that most distinguishes it from solo flight is the:

A. Aircraft's normal mechanical operation

B. Use of standard checklists during cruise

C. Continuous teaching-versus-safety division of attention

D. Presence of routine pre-flight inspection requirements

44. Crew resource management (CRM) is most accurately described as:

A. A regulation requiring two pilots on every aircraft

B. The effective use of all resources to ensure a safe flight

C. A maneuver evaluated only during the practical test

D. An optional course for airline transport pilots only

45. Across every Part One chapter of an instructional curriculum, the defining instructor skill is the:

A. Recognition and correction of student errors with diagnosis

B. Speed at which the syllabus is completed

C. Ability to fly each maneuver more precisely than the student

D. Marketing ability to recruit new students

46. When a student exhibits a defense mechanism response to repeated correction, the most likely cause is:

A. A threat to the student's self-esteem triggering an unconscious protective response

B. A medical condition requiring immediate professional evaluation

C. A lack of basic aptitude that should disqualify the student from training

D. A medication interaction with the cockpit environment

47. A flight instructor's instructional response to a student displaying projection (blaming the airplane for personal errors) should be to:

A. Aggressively confront the student until they admit fault publicly

B. Document each occurrence and refer the student to the FAA

C. Discontinue all training and reassign the student to another instructor

D. Reduce stress, restore an earlier success, and rebuild a low-threat climate

48. Of the laws of learning, the one most directly explaining why an instructor must teach a maneuver correctly from the first demonstration is the law of:

A. Primacy, since what is learned first creates a lasting impression

B. Recency, since material learned last is best remembered

C. Effect, since pleasant feelings strengthen learning

D. Exercise, since repetition strengthens memory

49. A flight instructor effectively teaching ADM relies primarily on which instructional method?

A. Scenario-based training, with realistic decisions in context

B. Multiple-choice testing of decision theory in the abstract

C. A one-page checklist memorized verbatim before each lesson

D. Strict avoidance of any decisions until the rating is earned

50. A flight instructor's defining task in teaching aeronautical decision-making is to help the student:

A. Memorize a fixed list of right answers for common emergencies

B. Avoid all flights in which weather is forecast to be variable

C. Internalize a habit of honest hazard recognition and structured decisions

D. Rely on the instructor's guidance long after the certificate is earned

FIA BLOCK — Q51–Q150

51. An airplane stalls at 50 KIAS at 1 G. At a level coordinated turn of 60° bank, it will stall at approximately:

A. 50 KIAS

B. 71 KIAS

C. 100 KIAS

D. 35 KIAS

52. Load factor in a level coordinated turn at 45° of bank is approximately:

A. 1.00 G

B. 2.00 G

C. 1.41 G

D. 4.00 G

53. An airplane has a maximum gross weight of 2,400 lb, empty weight 1,500 lb, and pilot + passenger + baggage totaling 600 lb. The maximum fuel that can be added at 6 lb/gal is:

A. 75 gallons

B. 60 gallons

C. 50 gallons

D. 100 gallons

54. A pilot operates at high density altitude on a hot summer day at a high-elevation airport. The most direct effect on a normally aspirated airplane is:

A. Reduced fuel consumption due to leaner mixture at altitude

B. Reduced engine power and longer takeoff distance

C. Improved climb performance due to thinner intake air

D. Increased maneuvering speed and improved acceleration

55. The lift equation states that lift varies with air density, the square of velocity, wing area, and the:

A. Color of the wing's paint

B. Number of passengers aboard

C. Surface elevation of the underlying terrain

D. Coefficient of lift, which depends primarily on angle of attack

56. Total drag on a typical light airplane is minimized at the airspeed corresponding to:

A. The best lift-to-drag ratio in the current configuration

B. The never-exceed airspeed at the red line

C. The top of the green arc maximum structural cruising speed

D. The maximum flap extension airspeed

57. Maneuvering speed (Va) at an operating weight below maximum gross weight is:

A. Identical to the published value because Va is altitude-only

B. Lower than published because lighter airplanes are accelerated more easily

C. Higher than published because the structure is lightly loaded

D. Slightly higher because lighter airplanes accelerate slowly to limit G

58. The critical angle of attack of a given wing in a given clean configuration is:

A. Essentially constant regardless of weight, bank, or density altitude

B. Varying directly with operating weight

C. Set by the pilot via the airspeed indicator

D. Decreasing significantly when density altitude rises

59. The first action in the standardized stall recovery sequence is to:

A. Apply maximum allowable power before any other change

B. Roll the airplane into a steep banked turn for energy recovery

C. Reduce angle of attack by lowering the pitch attitude

D. Retract all flaps to the up position immediately

60. A spin requires which two conditions to be present simultaneously?

A. Wings-level flight at maneuvering speed and idle thrust

B. A stalled wing and the presence of yaw producing autorotation

C. A coordinated turn at maneuvering speed and full power

D. Reduced visibility outside and partial loss of vacuum instruments

61. The PARE spin recovery sequence calls for:

A. Power smoothly to full takeoff setting before any other change

B. Power idle, ailerons neutral, rudder opposite the rotation, elevator briskly forward

C. Power full, aileron with the rotation, rudder neutral, elevator full back

D. Reduce throttle slightly, ailerons with the rotation, rudder neutral, elevator full back

62. Spin training in a typical general-aviation airplane is permissible only when the aircraft is:

A. Loaded to its aft center-of-gravity limit for easier entry

B. Operated below 1,000 feet AGL to limit altitude loss

C. Filled to its maximum gross weight for added stability

D. Specifically certificated for intentional spins

63. Ground effect can produce which of the following on takeoff?

A. A significant reduction in apparent lift requiring higher rotation speed

B. Premature liftoff at an airspeed too low to sustain climb out of ground effect

C. A sudden increase in induced drag immediately after liftoff

D. An automatic transition into best lift-to-drag cruise without pilot input

64. Wingtip vortices behind a heavy aircraft are strongest when that aircraft is:

A. Light, dirty, and fast in a high-performance climb

B. Heavy, clean (no flaps), and slow on approach or initial climb

C. Light, clean, and operating well above maneuvering speed

D. Heavy, fully configured for landing, and traveling at high speed

65. A four-stroke reciprocating aircraft engine cycle proceeds in which sequence?

A. Power, exhaust, intake, compression

B. Compression, intake, power, exhaust

C. Exhaust, power, compression, intake

D. Intake, compression, power, exhaust

66. Carburetor ice can form under which atmospheric conditions?

A. A wide range of temperatures with visible moisture or high humidity

B. Cold dry air well below freezing only at high altitude

C. Hot, dry desert conditions at low density altitude

D. Standard atmospheric conditions with very low humidity

67. During a climb without mixture adjustment, the fuel-air mixture becomes:

A. Richer because air density decreases relative to fuel flow

B. Leaner because air density decreases relative to fuel flow

C. Unchanged because the carburetor automatically compensates

D. Cleaner because cooler air burns more completely at altitude

68. A fuel-injected engine is generally immune to carburetor ice but susceptible to:

A. Magneto failure during normal cruise operations

B. Vapor lock and a more sensitive hot-start procedure

C. Sudden electrical system failures during engine start

D. Excessive prop pitch oscillation at low throttle settings

69. A blocked pitot tube with an open static port will cause the airspeed indicator to:

A. Read consistently lower than true airspeed at every altitude

B. Read true airspeed only during straight and level flight

C. Remain stuck at the airspeed at the moment of blockage

D. Behave like an altimeter, reading high in a climb and low in a descent

70. A blocked static port (with pitot clear) will cause the altimeter and vertical speed indicator to:

A. Continue functioning normally with no observable effect

B. Reverse readings during climb and descent

C. Freeze, with the airspeed reading also becoming unreliable

D. Display an inverted scale until ground reset is performed

71. Which of the following will raise an airplane's stall speed?

A. Increased load factor produced by maneuvering or a steep turn

B. Reducing weight by burning fuel during a long cruise

C. Extending wing flaps to a full landing position

D. Operating at a low density altitude near sea level

72. ARROW is the recognized mnemonic for required-aboard documents. The "W" stands for:

A. Wiring diagram of the electrical system

B. Weight and balance data for the aircraft

C. Wing identification plate at the leading edge

D. Whirl mode certification for the propeller

73. An annual inspection is required for all civil aircraft every:

A. 12 calendar months from the previous annual

B. 6 calendar months regardless of utilization

C. 50 flight hours regardless of calendar time

D. 24 calendar months at IFR certification cycles

74. A 100-hour inspection is required in addition to the annual when an aircraft is:

A. Operated only under VFR in good weather

B. Owned by an individual rather than a flight school

C. Used for hire or for flight instruction in an instructor-provided aircraft

D. Stored in a hangar between training flights

75. Which class of airspace requires an explicit ATC clearance to enter?

A. Class B, surrounding the busiest airports

B. Class G, in remote uncontrolled areas

C. Class E above 14,500 feet MSL by day under VFR

D. Class D, around typical towered training airports

76. Two-way radio communication must be established before entering which class of airspace?

A. Class A, in which VFR entry without communication is permitted

B. Class G, in remote uncontrolled areas

C. Class E above 14,500 feet during VFR daytime operations

D. Class C, around moderately busy towered airports

77. To carry passengers under Part 91, a pilot must have completed three takeoffs and landings within the preceding:

A. 12 calendar months in any aircraft for which the pilot is rated

B. 30 days in the same category of aircraft regardless of class

C. 24 calendar months in any aircraft regardless of category and class

D. 90 days in the same category, class, and (if a type rating is required) type

78. A flight review under 14 CFR §61.56 must be completed within the preceding:

A. 6 calendar months and must include 30 minutes of ground training

B. 36 calendar months and must include 3 hours of ground training

C. 24 calendar months and must include at least 1 hour of ground and 1 hour of flight

D. 12 calendar months and must include a written knowledge test by the FAA

79. A flight instructor's recency-of-experience requirements under 14 CFR §61.197 are evaluated over the preceding:

A. 12 calendar months and require an additional checkride annually

B. 6 calendar months and require monthly recurrent ground training

C. 24 calendar months with several alternative satisfaction options

D. 36 calendar months and require completion of a Part 142 course

80. Section 91.3 establishes the pilot in command as:

A. Required to share command decisions with passengers when carried

B. Bound to follow ATC instructions even in declared emergencies

C. Permitted to delegate command authority to any qualified passenger

D. Directly responsible for, and the final authority over, the operation of the aircraft

81. Hypoxic hypoxia is caused by:

A. Insufficient oxygen partial pressure reaching the blood at altitude

B. Reduced blood oxygen-carrying capacity from carbon monoxide

C. Inadequate blood circulation due to G-forces or cold

D. Cellular inability to use oxygen, as caused by alcohol

82. During a night approach over featureless or unlit terrain, the most likely visual illusion is the:

A. Black-hole illusion, removing the cues needed to judge height

B. Coriolis illusion produced by head movement in a stabilized turn

C. Runway-width illusion making a wide runway appear closer

D. Atmospheric haze illusion making distant objects appear nearer

83. Spatial disorientation is most accurately described as:

A. A condition fully prevented by adequate cockpit ventilation

B. A regulatory restriction limited to night VFR flight

C. A normal sensation that should be ignored without further action

D. The inability to determine one's position, attitude, and motion relative to earth

84. The IM SAFE personal self-assessment checklist evaluates:

A. Inspection, maintenance, sealing, airworthiness, fuel, equipment

B. Instruments, mixture, switches, altimeter, flaps, electrical

C. Inertia, magnetism, signal, audio, fuel, engine

D. Illness, medication, stress, alcohol, fatigue, emotion

85. Atmospheric stability is most directly determined by:

A. The geographic latitude of the air mass

B. The lapse rate at which temperature decreases with altitude

C. The total amount of water vapor present in the air

D. The surface elevation beneath the air mass

86. A cold front typically produces:

A. A wide band of stratus and prolonged steady precipitation

B. Smooth conditions with unlimited visibility for many hours

C. Persistent fog with no significant wind shift at passage

D. A narrow band of intense, brief weather with a sharp wind shift

87. A warm front typically produces:

A. A narrow band of intense thunderstorms over a short duration

B. Cool dry air with scattered fair-weather cumulus only

C. A wide band of stratus, prolonged steady precipitation, and low ceilings

D. Severe clear-air turbulence above 20,000 feet only

88. During which stage of a thunderstorm's life cycle are updrafts and downdrafts both present with heavy precipitation, lightning, and the gust front?

A. The cumulus stage, characterized by building updrafts only

B. The dissipating stage, dominated by weakening downdrafts

C. The pre-cumulus stage, marked by clear air and rising temperatures

D. The mature stage, beginning when precipitation reaches the surface

89. Structural icing requires which two conditions simultaneously?

A. Visible moisture and aircraft surface temperature at or below freezing

B. High humidity and outside temperature well above freezing

C. Light precipitation and a stable atmospheric layer

D. Smooth airflow and clear skies above the aircraft

90. Thunderstorm development requires three simultaneous ingredients:

A. Sufficient moisture, an unstable lapse rate, and a lifting mechanism

B. Stable air, dry conditions, and gentle vertical motion

C. Smooth steady winds, an inversion layer, and clear skies

D. Cool surface temperatures, low humidity, and high pressure

91. An AIRMET Zulu advises pilots specifically of:

A. Severe convective activity producing thunderstorms

B. Mountain obscuration affecting VFR operations only

C. Icing conditions and freezing levels along the route

D. Strong surface winds and low-level turbulence

92. A Convective SIGMET specifically advises pilots of:

A. Severe convective weather including thunderstorms producing tornadoes

B. Routine moderate turbulence at all altitudes along airways

C. Low-level wind shear advisories at non-towered airports

D. Forecast visibilities below 1 mile without precipitation

93. A METAR is most accurately described as:

A. A 24-hour forecast of expected conditions at an airport

B. A routine observation of current weather at an airport

C. A long-range outlook covering an entire flight corridor

D. A warning of severe convective activity along major airways

94. A pilot report (PIREP) is uniquely valuable because it:

A. Replaces the need for any METAR or TAF along the planned route

B. Is generated automatically by satellites scanning each system

C. Provides a binding legal forecast that ATC must enforce

D. Describes conditions actually encountered in flight by other pilots

95. During flight planning, the most comprehensive briefing type for a pilot who has received no prior information about the flight is the:

A. Outlook briefing valid for the next 12 hours

B. Standard briefing covering adverse conditions through NOTAMs

C. Abbreviated briefing covering only NOTAMs and ATC delays

D. NOTAM-only briefing requested directly from the tower

96. A pilot encounters known icing in an aircraft not approved for flight into known icing. The correct response is to:

A. Exit the icing conditions immediately by altitude or course change

B. Continue at the planned altitude and increase cruise power

C. Slow to the bottom of the white arc to reduce accretion rate

D. Disable the pitot heat to verify icing severity by airspeed

97. A microburst encounter on approach typically produces in sequence:

A. An increasing headwind, then a powerful downdraft, then a tailwind

B. A persistent crosswind from the right with no vertical component

C. A steady tailwind only with no downdraft component

D. Smooth conditions with a gradual airspeed decrease throughout

98. A student conducts a magneto check during run-up and notices the RPM drop exceeds the manufacturer's allowable maximum on the left magneto. The most likely cause is:

A. A blocked pitot tube affecting the airspeed indicator

B. A faulty ignition component such as fouled plugs or a defective magneto

C. An over-rich fuel-air mixture from low density altitude

D. A normal indication requiring no further action

99. During a takeoff at high density altitude in a normally aspirated airplane, a pilot should expect:

A. Improved climb performance due to denser cool air

B. Identical takeoff performance because the airplane has not changed

C. Reduced fuel burn from richer mixture at altitude

D. Substantially degraded takeoff and climb performance

100. Wing contamination such as frost or ice will most directly cause:

A. A reduction in stall speed proportional to thickness

B. Increased stall speed and degraded takeoff and climb performance

C. No measurable effect, since lift depends only on airspeed

D. An automatic increase in maneuvering speed limits

101. A student demonstrates a base-to-final turn in which the airplane overshoots the runway centerline. The student tightens the turn with bottom rudder, the inside wing drops, and airspeed decays. The instructor should recognize this as:

A. A normal coordinated turn requiring no further intervention

B. The classic precursor to a stall-spin accident in the traffic pattern

C. A standard chandelle entry as taught in commercial training

D. A safe maneuver fully prevented by the stall warning horn

102. A student attempts a power-on stall and pulls the yoke aft when the stall warning sounds. The instructor should most likely diagnose:

A. A stress-driven pull-back rather than the trained AOA reduction

B. A pitot system malfunction producing false stall warnings

C. A normal recovery exactly as the manufacturer specifies

D. A jammed elevator preventing forward yoke movement

103. A student consistently rounds out too high on landing. The instructor's first diagnostic step should be to:

A. Repeat the maneuver many times until the error disappears

B. Stop all landing practice for at least 60 days

C. Tell the student to "just round out lower" without further explanation

D. Determine whether the error is a slip in execution or a mistake in judgment

104. When teaching a primary student about angle of attack and stall, the most useful conceptual framing is that:

A. The airplane always stalls at the same airspeed regardless of conditions

B. The airplane always stalls at the same angle of attack, but the airspeed varies with conditions

C. The airplane stalls only when the throttle is reduced to idle

D. The airplane stalls only at low altitude near the surface

105. A pilot relying on airspeed rather than angle of attack to manage stall margins is most likely to be surprised by an accelerated stall in:

A. Straight and level cruise well above maneuvering speed

B. A steep coordinated turn at low airspeed

C. A descent at idle power below the green arc lower limit

D. A normal takeoff roll prior to rotation airspeed

106. A pilot at maneuvering speed (Va) in heavy turbulence is most directly protected from:

A. Structural damage from full deflection of a single flight control

B. Loss of fuel pressure during violent maneuvering events

C. Loss of radio communication with the air traffic controller

D. Inadvertent autopilot disengagement on aileron input

107. Within the certified envelope, an aft center of gravity, compared to a forward CG, produces:

A. Lower stall speed and more difficult stall and spin recovery

B. Higher stall speed and easier stall and spin recovery

C. No measurable change in handling characteristics

D. A lower never-exceed speed and reduced wing area

108. During a level coordinated turn, the force that actually turns the airplane is:

A. The increased thrust pointed into the turn

B. The horizontal component of the lift vector when banked

C. The drag from deflected ailerons on the outside wing

D. The rudder pressure applied in the direction of the turn

109. Lateral stability — resistance to rolling around the longitudinal axis — is provided primarily by:

A. The vertical stabilizer acting as a weathervane against yaw

B. The elevator trim setting selected for cruise flight

C. The dihedral angle built into the wings

D. The location of the center of gravity along the longitudinal axis

110. Directional stability — resistance to yawing around the vertical axis — is provided primarily by:

A. The vertical stabilizer acting as a weathervane against the relative wind

B. The dihedral angle built into the wings

C. The elevator trim setting in cruise

D. The horizontal stabilizer and CG location

111. An engine failure in flight calls for the priority of actions captured in which mnemonic?

A. Aviate, navigate, communicate

B. Communicate, navigate, aviate

C. Communicate, aviate, navigate

D. Navigate, communicate, aviate

112. The first action after an engine failure is to:

A. Tune the radio to 121.5 and declare an emergency

B. Open the cabin door immediately for emergency egress

C. Establish best-glide airspeed to maximize available time and distance

D. Pull the mixture to idle cutoff to prevent damage

113. A go-around from an unstabilized approach is most accurately described as:

A. A maneuver requiring explicit ATC clearance at all airports

B. A normal pilot decision initiated early when needed

C. An emergency reserved only for the final seconds before touchdown

D. A failure of approach planning that should be avoided

114. A crosswind landing using the sideslip (wing-low) method requires the pilot to use:

A. Aileron away from the wind and rudder in the same direction

B. Rudder only, with wings held perfectly level throughout

C. Full back elevator with no rudder input on the rollout

D. Aileron into the wind and rudder opposite to align with the centerline

115. In a standard left-traffic pattern, the leg flown parallel to the landing runway but in the opposite direction is the:

A. Crosswind leg, perpendicular to the departure end of the runway

B. Downwind leg, parallel to the runway but opposite the takeoff direction

C. Upwind leg, climbing away from the departure runway

D. Base leg, perpendicular to the approach end of the runway

116. When teaching ground reference maneuvers, the central principle the student must understand is that:

A. Wind has no effect on the airplane once airborne

B. Bank angle should remain constant regardless of wind

C. Bank angle must vary with the wind to keep a planned ground track

D. The path through the air matters more than the path over the ground

117. Wake-turbulence avoidance behind a heavy aircraft on takeoff calls for the following aircraft to:

A. Take off as quickly as possible to overtake below the heavy

B. Take off heading 90 degrees from the heavy's departure heading

C. Climb directly through the wake at a high angle of attack

D. Rotate prior to the heavy's rotation point and climb above its flight path

118. Mechanical turbulence is most likely produced by:

A. A clear stable air mass over level terrain with light winds

B. A smooth jet stream at high altitude over the open ocean

C. Strong winds flowing across irregular terrain or obstacles

D. A high-altitude inversion layer in still atmospheric conditions

119. Alcohol consumption affects flight safety even after the legal minimum waiting period because:

A. The regulatory waiting period was designed to allow full elimination

B. Caffeine and alcohol cancel each other out completely

C. Lingering effects and hangover symptoms can persist beyond the legal floor

D. Alcohol's effects pass entirely with adequate sleep

120. A pilot taking an over-the-counter cold medication should recognize that:

A. The medication is safe for flight because no prescription is required

B. Over-the-counter status does not mean "safe for flight"

C. A double dose will clear symptoms before flight

D. Such medications are prohibited during the entire calendar year

121. Negative transfer of learning occurs when:

A. Earlier learning aids the acquisition of new learning

B. Earlier learning interferes with the acquisition of new learning

C. The student lacks any prior experience related to the new skill

D. The student is rewarded for completing a particularly difficult lesson

122. A constant-speed propeller allows the pilot to:

A. Eliminate manifold pressure management entirely at altitude

B. Bypass the magnetos during engine starting in cold conditions

C. Set RPM independently of throttle position to optimize performance

D. Operate without any RPM gauge in the cockpit panel

123. Carburetor heat is applied during the run-up and a slight RPM drop is observed. The drop indicates:

A. Heated air reaching the carburetor, which is the desired result

B. A defective magneto requiring grounded-out troubleshooting

C. A blocked fuel injection nozzle restricting fuel flow

D. A failure of the carburetor heat system to deliver warm air

124. A wing's critical angle of attack in a given clean configuration is most accurately described as:

A. Varying directly with operating weight, increasing as weight increases

B. Set by the pilot through manipulation of the airspeed indicator

C. Essentially constant regardless of weight, bank angle, or density altitude

D. Decreasing significantly when density altitude rises during cruise

125. Maneuvering speed (Va) is best defined as the maximum airspeed at which:

A. The airplane may be flown in any conditions including severe icing

B. Full deflection of a single control will not exceed the structural limit

C. The autopilot may remain engaged during all turbulence

D. Maximum landing flap extension is permitted on final approach

126. When demonstrating a maneuver to a primary student, the instructor should:

A. Add deliberate imperfections so the student feels free to err

B. Provide commentary unrelated to the maneuver being demonstrated

C. Skip the explanation phase if time is short on the lesson

D. Perform the maneuver exactly to the standard the student must reach

127. A pilot operating an aircraft used for hire or for flight instruction in an instructor-provided aircraft must ensure that the aircraft has a current:

A. 100-hour inspection only, with no annual required

B. Annual inspection only, with no 100-hour required

C. Pilot certificate only, with no maintenance inspection required

D. Annual inspection plus a current 100-hour inspection cycle

128. The flight instructor recency rule under 14 CFR §61.197 lives in:

A. 14 CFR Part 43, governing maintenance and preventive maintenance

B. 14 CFR Part 67, governing medical certification standards

C. 14 CFR Part 61 Subpart H, governing flight instructors

D. 14 CFR Part 71, governing the structure of designated airspace

129. A flight instructor's endorsement on a logbook for solo flight in a specific make and model certifies that:

A. The student has received the required training and is proficient to solo that make and model

B. The student has paid all flight school fees through the rating

C. The student has a current first-class medical certificate

D. The student is the legal minimum age for a commercial certificate

130. A student exhibits the hazardous attitude of resignation ("what's the use?"). The appropriate antidote to teach is:

A. "Follow the rules. They are usually right."

B. "I'm not helpless. I can make a difference."

C. "Taking chances is foolish."

D. "Not so fast. Think first."

131. A pilot's airman knowledge test report shows a 75% score on the FIA. From the examiner's perspective during the upcoming practical test, this score:

A. Eliminates the oral portion of the practical test entirely

B. Increases the number of ACS codes the examiner must revisit during the oral

C. Results in a reduced fee for the practical test

D. Has no effect on the upcoming practical test conduct

132. An effective lesson plan is best characterized as:

A. A rigid script that must be followed lesson-by-lesson with no deviation

B. A regulatory document submitted to the FAA annually

C. A flexible guide supporting the lesson's objective and adapting to the student

D. A list of regulations the student must memorize before any flight training

133. A flight review under §61.56 must include at least:

A. 30 minutes of ground training and 30 minutes of flight training

B. 1 hour of ground training and 1 hour of flight training

C. 3 hours of ground training and 3 hours of flight training

D. 6 hours of ground training and no flight time required

134. Required documents that must be aboard a civil aircraft for legal flight are remembered by the mnemonic:

A. CARES: Certificate, Aircraft data, Registration, Equipment list, Standards

B. FREES: Fuel records, Repair records, Equipment, Endorsements, Standards

C. POWER: Pilot certificate, Operating manual, Weight, Equipment, Registration

D. ARROW: Airworthiness, Registration, Radio (when required), Operating limitations, Weight and balance

135. Hypoxia symptoms most often degrade a pilot's judgment:

A. After the pilot has clearly recognized the impairment and acted

B. Before the pilot recognizes the impairment, which is the danger

C. Only at altitudes above 25,000 feet, regardless of the individual

D. After all pilots in the cockpit have donned supplemental oxygen

136. A student exhibits the defense mechanism of projection, repeatedly blaming the airplane for errors that are clearly the student's own. The instructional response should be to:

A. Reduce stress, restore an early success, and rebuild a low-threat climate

B. Aggressively confront the student until they admit fault

C. Document each occurrence and refer the student to the FAA

D. Discontinue training and reassign the student to another instructor

137. Of the laws of learning, the one most directly explaining why correct teaching the first time is more efficient than fixing it later is the law of:

A. Recency, since material learned last is best remembered

B. Effect, since pleasant feelings strengthen learning

C. Exercise, since things repeated are best remembered

D. Primacy, since what is learned first creates a lasting impression

138. A pilot operating in icing conditions in an aircraft not certified for flight into known icing should:

A. Increase cruise power to maintain speed and prevent stalling

B. Slow to the bottom of the white arc to reduce accretion rate

C. Disable the pitot heat to verify icing severity by airspeed

D. Exit the icing conditions immediately by altitude or course change

139. The standardized stall recovery sequence begins with which action?

A. Apply full takeoff power before any other control change

B. Retract all flaps immediately to clean up the wing

C. Reduce angle of attack by lowering the pitch attitude

D. Roll the airplane into a steep banked turn for energy recovery

140. A pilot flying VFR at night must ensure the aircraft has functioning:

A. Pitot heat and oxygen system regardless of altitude

B. A second altimeter cross-referenced to the primary

C. Position lights, anti-collision lights, and an electrical source

D. A constant-speed propeller regardless of engine type

141. An airplane has a maximum gross weight of 2,300 lb. Empty weight is 1,500 lb. Pilot is 180 lb, passenger 170 lb, and baggage 50 lb. The maximum fuel that can be added at 6 lb/gal is approximately:

A. 80.0 gallons

B. 70.0 gallons

C. 75.0 gallons

D. 66.7 gallons

142. An airplane stalls at 60 KIAS at 1 G. At a load factor of 2 G, it will stall at approximately:

A. 60 KIAS

B. 120 KIAS

C. 85 KIAS

D. 75 KIAS

143. Wing flaps deployed to a landing position generally:

A. Disable the stall warning system during the landing phase

B. Reduce induced drag while increasing parasite drag dramatically

C. Lower the stall speed and improve low-speed handling for landing

D. Eliminate the need for rudder coordination during the approach

144. A pilot at high density altitude in a normally aspirated airplane will experience:

A. Improved climb performance due to thinner intake air

B. Increased maneuvering speed and improved takeoff acceleration

C. Reduced fuel consumption due to leaner mixture

D. Reduced engine power and longer takeoff distance

145. Within an instructor-led lesson, the conclusion exploits which law of learning?

A. The law of primacy, planting first impressions

B. The law of intensity, requiring a dramatic finish

C. The law of recency, since what is learned last is best remembered

D. The law of exercise, requiring extended practice

146. A pilot at maneuvering speed (Va) at a lighter operating weight (well below maximum gross) finds that:

A. Va is lower than the published value, because lighter airplanes are accelerated more easily

B. Va is identical to the published value, because Va depends only on altitude

C. Va is significantly higher than the published value, because of light loading

D. Va is no longer relevant because the structure has unlimited margin at light weight

147. A pilot tightens a base-to-final turn at low airspeed with cross-controlled aileron and rudder. The instructor should recognize the maneuver as creating the conditions for:

A. A normal high-energy go-around with no significant risk

B. A stall-spin accident in the traffic pattern

C. A controlled short-field landing at a steep angle

D. A maneuver fully prevented by modern stall warning horns

148. A flight instructor providing instruction in an instructor-provided aircraft must ensure the aircraft has both a current annual inspection and a current:

A. Pitot-static inspection regardless of operation type

B. Transponder inspection regardless of operation type

C. Flight review for the instructor's currency

D. 100-hour inspection cycle

149. A pilot encounters an AIRMET Sierra on the planned route. This advisory most directly indicates:

A. Severe convective activity producing thunderstorms

B. Icing conditions and freezing levels at all altitudes

C. IFR conditions and mountain obscuration

D. Strong surface winds and turbulence

150. A pilot reading a forecast indicating an advancing cold front along the planned route at the planned arrival time should expect:

A. A wide band of stratus and prolonged steady precipitation

B. Cool dry air with unlimited visibility and fair-weather cumulus

C. A narrow band of intense weather and a sharp wind shift at passage

D. Severe clear-air turbulence above 20,000 feet only on the final leg

PRACTICE EXAM 4 — ANSWER KEY AND EXPLANATIONS

1. A — Security needs sit just above physiological in the hierarchy, and a perceived threat (here, residual stress from a harsh critique) keeps the student stalled at that level rather than reaching esteem and self-actualization where learning occurs. Higher-order learning cannot proceed until the security need is addressed. The instructor must reduce the threat before teaching can resume effectively.

2. A — Denial is the defense mechanism in which a person refuses to accept an uncomfortable reality, such as insisting a botched maneuver "went fine" despite recorded evidence. It directly rejects the fact rather than reinterpreting it. Recognizing denial signals that the student's self-esteem is threatened, and the response is to reduce stress, not argue with the assertion.

3. C — A perceived element of threat narrows perception and blocks learning, and a sharp, dismissive tone is precisely the kind of psychological threat that triggers the response. The student's degraded subsequent performance is the predictable result. The remedy is adjusting tone to rebuild a safe learning climate so perception can widen again.

4. A — Memorization is the shallowest level of knowledge: the student can recite word-for-word but cannot adapt to changed conditions because no underlying concept has formed. Understanding and

concept formation would produce the flexibility this student lacks. The instructor must push past rote recall toward genuine comprehension.

5. A — The law of effect states that learning is strengthened by pleasant feelings and weakened by unpleasant ones, which is exactly why ending a frustrating lesson on genuine success matters. Primacy concerns first impressions, recency concerns memory placement, and intensity concerns vividness. Ending positively is the deliberate application of the law of effect.

6. C — A mistake occurs when execution matches intent but the intent itself reflects a wrong underlying concept. A slip is the opposite — right plan, wrong execution. Mistakes require re-teaching of the underlying concept; practice alone deepens the wrong understanding rather than removing it.

7. D — Positive transfer occurs when earlier learning aids the acquisition of new learning, such as cruise pitch-power mastery supporting approach and landing development. The opposite is negative transfer. Naming the connection explicitly accelerates the transfer effect.

8. D — Repression is the unconscious suppression of unpleasant or threatening material, and a frightening turbulence encounter is exactly the kind of event the mind buries. The pattern does not fit medical, motivation, or simple disuse explanations. The instructor's response is to rebuild a low-threat environment before re-introducing the content.

9. C — The affective domain addresses values, attitudes, and emotional responses, including the safety-critical attitudes an aviator must hold. The cognitive domain covers knowledge and the psychomotor covers motor skills. Effective flight instruction engages all three, and neglecting the affective domain produces a technically capable but dangerously attituded pilot.

10. A — Short-term (working) memory has limited capacity and is easily overloaded by lengthy briefings or many simultaneous items. This is the bottleneck instructors must respect by chunking material and verifying each chunk. Treating working memory as unlimited produces students who retain almost nothing of a long instruction.

11. C — Interference is the theory of forgetting in which new or competing learning crowds out earlier learning. Disuse, decay, and repression operate through different mechanisms. Recognizing interference helps the instructor separate easily confused topics in the syllabus.

12. B — Communication is the transfer of meaning, and it succeeds only when the meaning received matches the meaning the instructor intended. Volume, terminology, and acknowledgment are means, not the test of success. This is why instructors confirm understanding through questioning rather than assuming a nod equals comprehension.

13. A — Lack of common experience is the single greatest communication barrier, because words mean what experience has taught them to mean, and a beginner has not yet built the experience that gives technical language meaning. Accent, checklists, and age are real but secondary factors. Building common experience precedes precise vocabulary.

14. A — The teaching lecture, particularly with deliberate audience involvement, is the most efficient method for delivering a large body of factual information while mitigating the passivity that pure lectures invite. Demonstration-performance is for physical skill; pure SBT and student-led discovery do not handle raw information transfer as efficiently. The teaching lecture combines efficiency with engagement.

15. B — The demonstration-performance method proceeds through explanation, demonstration, student performance with supervision, and evaluation. The sequence mirrors natural skill acquisition: understand it, see it, do it under guidance, measure against the standard. Reordering or skipping phases weakens the method.

16. D — Scenario-based training is a specific form of problem-based learning organized around a realistic flight scenario in which the student applies knowledge and makes decisions in context. Its strength is teaching knowledge, skill, and judgment together rather than as isolated items. SBT is especially valuable for developing ADM and risk-management habits.

17. D — Integrated flight instruction teaches maneuvers both by outside visual references and by reference to flight instruments from the very beginning of training. The student develops instrument cross-check as a habit rather than a late-stage skill, producing a more precise and safer pilot.

18. C — The guided discussion method develops student understanding by drawing knowledge out through skillful questioning, with the instructor functioning as a facilitator. Pure lecture is one-way; demonstration-performance is for physical skill; passive video review is not a recognized active method. The method demands more preparation than a lecture, not less.

19. D — The guided discussion method's most important preparation is to anticipate the directions the discussion may take so the instructor is ready with questions to steer the exchange. The method demands more prep than a lecture, not less. Effective facilitation looks effortless precisely because it was prepared.

20. A — An instructional aid is valuable only when it supports the lesson's objective and supplements (rather than replaces) the instructor's teaching. Aids that compete with the message, replace the instructor, or impress for their own sake fail the test. The instructor remains the teacher; aids are tools in the instructor's hands.

21. C — The four steps of the teaching process are preparation, presentation, application, and assessment — a closed, self-correcting cycle applicable at every scale of instruction. Each step is necessary; skipping any breaks the cycle. The framework structures a single concept, a lesson, and an entire course identically.

22. C — A performance-based objective specifies what the student will do, under what conditions, and to what criterion that defines acceptable performance. Without the criterion, the objective cannot anchor assessment. The structure ties the lesson plan directly to the completion standards used to evaluate the student.

23. D — A course of training is built by identifying blocks of learning and sequencing them logically from foundational to advanced. Sequencing by calendar, instructor interest, or student request produces dangerous gaps. Blocks-of-learning thinking is the design principle that prevents those gaps.

24. D — A training syllabus differs from a rigid script by allowing the instructor to adapt pace and sometimes sequence to the individual student. It provides essential structure without becoming a straitjacket. Readiness governs progression, not the calendar.

25. C — The conclusion of a lesson exploits the law of recency, since what is learned last is best remembered. The introduction engages motivation, development builds known-to-unknown, and the conclusion locks in key points through summary. The full structure deliberately applies the laws of learning to each lesson.

26. A — A low-threat learning environment is one in which the student feels safe enough to attempt, err, and be corrected. It is not an environment without standards or critique — those are required for learning. The best learning environment is simultaneously supportive and rigorous.

27. C — Formative assessment occurs during instruction and is used to shape ongoing learning, distinct from summative assessment that certifies achievement at milestones. Formative assessment is low-stakes and developmental; instructors use it constantly. Reserving assessment for end-points squanders the chance to shape learning as it happens.

28. C — A follow-up question probes deeper after the student's initial answer, testing the depth of understanding rather than its surface presence. Yes-or-no, toss-up, and trick questions either assess little or actively mislead. Skilled questioning is both an assessment tool and a teaching method.

29. B — The Airman Certification Standards integrate knowledge, risk management, and skill elements within each task, refusing to treat them as separate concerns. A competent pilot integrates all three in flight, and the ACS reflects that reality. This integration is the ACS's defining structural feature.

30. A — ACS codes on the Airman Knowledge Test Report identify topics the examiner must revisit during the oral portion of the practical test. Every missed written question becomes a guaranteed oral-exam topic. Higher written scores hand examiners fewer codes and produce shorter, less probing orals.

31. B — An endorsement is a formal certification that the applicant meets the required standard the endorsement references. It is relied upon by the student, examiner, FAA, and flying public. An instructor who signs casually breaches the trust the certificate represents.

32. B — A premature endorsement to please a student or to keep a schedule is a breach of the trust the instructor's certificate represents. It exposes an unprepared pilot to a test or flight they cannot safely manage and exposes the instructor's certificate to consequences. The standard, not the relationship, governs every endorsement.

33. D — Student self-assessment, conducted with the instructor's guidance, builds the lifelong skill of evaluating one's own flying — exactly what a certificated pilot must do without an instructor. Reliance on the instructor produces a pilot who cannot judge their own performance after the rating. Self-assessment is the affective-domain skill the certificate's safety record depends on.

34. D — A flight instructor's signature on a logbook endorsement legally indicates that the instructor has personally determined the student meets the conditions specified. Informal observation, hearsay, and

chief-instructor discussion do not substitute. The instructor's certificate is on the line with every endorsement.

35. B — Professional development is a continuing obligation throughout the instructor's career, because aviation knowledge, regulations, technology, and best practices evolve. The certificate is the beginning of professional development, not its endpoint. An instructor who stops learning quickly teaches outdated material and models complacency.

36. B — PAVE identifies risk across Pilot, Aircraft, enVironment, and External pressures — the fourth category covering schedules, expectations, and get-there-itis. The other options are not recognized aviation risk-management frameworks. External pressures drive many accident chains.

37. D — Aeronautical decision-making is the systematic approach pilots use to consistently determine the best course of action in response to a given set of circumstances. It is taught through structured frameworks, not improvised by intuition. ADM is what turns knowledge and skill into safe outcomes, since most accidents stem from poor judgment.

38. C — The five hazardous attitudes are anti-authority, impulsivity, invulnerability, macho, and resignation ("What's the use?"). Each has a specific paired antidote the pilot consciously substitutes. Curiosity, optimism, and frustration are not on the FAA's recognized list.

39. D — Invulnerability is the hazardous attitude characterized by "It won't happen to me," in which the pilot discounts personal risk despite recognizing the hazard. The antidote is the deliberate substitution of "It could happen to me." Each attitude has a specific antidote tied to its specific thought.

40. D — The antidote to impulsivity ("do something quickly") is "Not so fast. Think first." Each hazardous attitude has its specific paired antidote that the pilot consciously substitutes. The FOI and FIA both test these pairings by name.

41. B — Single-pilot resource management is the art of managing all resources available to a pilot operating alone — inside and outside the cockpit. It encompasses ADM, task management, situational awareness, automation management, and the use of every resource. SRM is the practical discipline through which a lone pilot manages human-factors risk.

42. B — An instructor who models discipline with checklists, weather, and personal minimums teaches primarily in the affective domain, where attitudes and habits are formed. The cognitive content is straightforward; the durable lesson is the attitude the student absorbs from watching the instructor. Modeling the right attitudes is among the most important instructor duties.

43. C — The hazard unique to instructing is the continuous teaching-versus-safety division of attention that solo pilots never face. The instructor must allow latitude to learn while standing ready to intervene before any error becomes dangerous. Managing this tension is itself a learned instructor skill.

44. B — Crew resource management is the effective use of all available resources — human, hardware, and information — to ensure a safe flight. It originated in multi-crew aviation but informs single-pilot operations through SRM. CRM is not a regulation, a maneuver, or an optional course.

45. A — Every Part One chapter closes with the recognition and correction of student errors as the defining instructor skill, because this diagnostic discipline — observing accurately, inferring intent, distinguishing slip from mistake, correcting the cause — is what separates an instructor from a pilot who can merely fly. Speed, raw precision, and marketing are not the defining skill.

46. A — A defense mechanism response signals that the student's self-esteem is being threatened, triggering an unconscious protective response. Medical, aptitude, and medication explanations do not typically fit the pattern. The instructor's response is to reduce stress and rebuild safety, not press harder.

47. D — When a student deploys projection — blaming the airplane for personal errors — the correct response is to reduce stress, restore an earlier success, and rebuild a low-threat climate so the student can re-engage. Aggressive confrontation deepens the defense; reporting and reassignment are not appropriate. Defense mechanisms signal stalled learning, not a defective student.

48. A — The law of primacy holds that what is learned first creates the strongest and most lasting impression, which is why an instructor's first demonstration must be performed exactly to standard. A sloppy first demonstration plants a habit that is costly to remove later. Primacy drives the "get it right the first time" discipline.

49. A — ADM is most effectively taught through scenario-based training, where the student applies decision principles in realistic context. Multiple-choice testing of theory, memorized checklists, and avoidance of all decisions do not build the decision habit. SBT is the primary vehicle for ADM instruction.

50. C — The instructor's defining task in teaching ADM is to help the student internalize honest hazard recognition and a structured decision habit, rather than memorize answers, avoid variable flights, or rely on the instructor. ADM is built through repeated practice in scenarios where the student must actually decide. The outcome is a pilot who decides honestly under pressure long after the rating.

51. B — Stall speed at increased load factor follows $Vs(n) = Vs1 \times \sqrt{n}$. At 60° bank in a level turn, n = 2.0 G, so the stall speed is $50 \times \sqrt{2} \approx 70.71$ KIAS, rounded to 71 KIAS. This accelerated-stall relationship is the reason a steep turn at low airspeed is dangerous.

52. C — Load factor in a level coordinated turn at 45° bank is $n = 1/\cos(45°) = 1/0.707 \approx 1.41$ G. Load factor depends only on bank angle in a level turn, not on weight or airspeed. The accompanying stall speed increase at 1.41 G is the square root of load factor — about 1.19 times the 1-G value.

53. C — Useful load remaining for fuel = 2,400 − 1,500 − 600 = 300 lb. At 6 lb/gal, that is 300 ÷ 6 = 50 gallons. Weight-and-balance arithmetic is exam-tested directly, and the discipline of computing before loading prevents overgross takeoffs.

54. B — A normally aspirated airplane at high density altitude experiences reduced engine power (thinner intake air) and a longer takeoff distance. Maneuvering speed, climb performance, and fuel consumption do not improve at altitude. The combined power-and-lift reduction is what makes hot-high-humid takeoffs hazardous.

55. D — The lift equation is L = ½ρV²SC_L, so lift varies with air density, the square of velocity, wing area, and the coefficient of lift — the variable that depends primarily on angle of attack. Paint color, passenger count, and terrain elevation are not direct variables. The coefficient of lift is the variable the pilot most directly controls through AOA.

56. A — Total drag is minimized at the airspeed corresponding to the best lift-to-drag ratio, where induced and parasite drag intersect on the drag curve. This airspeed produces the best glide for distance and best endurance configurations. Vne, top of green arc, and max flap extension are operational limits, not drag minima.

57. B — Maneuvering speed decreases at lighter operating weights, counterintuitively, because a lighter airplane is accelerated more easily by a given aerodynamic force and reaches limit G at a lower airspeed. The heavier the airplane, the higher its Va. The FIA tests this weight relationship reliably.

58. A — The critical angle of attack of a given wing in a given clean configuration is essentially constant, regardless of weight, bank angle, or density altitude. What varies is the airspeed at which the wing is forced up to that angle. This single concept is the foundation of teaching stalls correctly.

59. C — The first action in the standardized stall recovery is to reduce angle of attack by lowering the pitch attitude, because nothing else recovers the wing once it is stalled. Adding power before reducing AOA can deepen the stall through the pitch-up tendency. Rolling wings level and adding power follow only after the wing is unstalled.

60. B — A spin requires two conditions simultaneously: a stalled wing and the presence of yaw producing autorotation. Without either ingredient the spin cannot develop. Recognizing the two-ingredient structure makes spin avoidance teachable — break either ingredient and the spin cannot occur.

61. B — The PARE recovery sequence is Power idle, Ailerons neutral, Rudder full opposite the rotation, Elevator briskly forward through neutral to break the stall. Each step is necessary and the order matters; the manufacturer's specific procedure for the airplane in use always governs. Aileron use during a spin can aggravate autorotation; the standard is neutral.

62. D — Spin training in a typical general-aviation airplane is permissible only when the aircraft is specifically certificated for intentional spins. Spinning a non-spin-certificated aircraft can produce an unrecoverable result. CG must also be within the certified envelope and sufficient altitude available for recovery.

63. B — Ground effect can produce premature liftoff at an airspeed too low to sustain climb out of ground effect, because reduced induced drag near the surface produces apparent extra lift. The airplane lifts off but cannot climb away. Recognizing and managing ground effect on takeoff is a primary teaching point.

64. B — Wingtip vortices are strongest from heavy, clean (no flaps), and slow aircraft — the configuration of a large jet on approach or initial climb. The strength of the vortex is the source of induced drag and the wake that trails the airplane. Knowing the heavy-clean-slow signature directs wake-avoidance behavior precisely.

65. D — A four-stroke reciprocating engine cycle proceeds intake, compression, power, exhaust — repeating continuously across the cylinders. Intake draws the mixture in, compression squeezes it, combustion produces the power stroke, and exhaust expels the burned gases. Memorizing the sequence supports diagnosing roughness and misfires.

66. A — Carburetor ice can form across a wide range of temperatures — including warm days — wherever sufficient moisture and the venturi effect cool the air below freezing inside the carburetor. It is not restricted to obviously cold conditions. The pilot's defense is carburetor heat applied per the manufacturer's procedure.

67. A — As the airplane climbs without mixture adjustment, air density decreases while fuel flow stays roughly the same, producing a progressively richer fuel-air mixture. Leaning restores the correct ratio and recovers efficiency and full available power. This is why mixture management is required cruise procedure at altitude.

68. B — A fuel-injected engine is immune to carburetor ice because no carburetor is present, but it has its own characteristic concerns including vapor lock and more sensitive hot-start procedures. Each system has unique teaching points the instructor must cover. The trade-off between systems is a recurring FIA topic.

69. D — A blocked pitot tube with an open static port causes the airspeed indicator to behave like an altimeter — reading high in a climb (as ambient static decreases while ram pressure is trapped) and low in a descent. This is the classic blocked-pitot signature the FIA tests reliably. Recognizing it allows the pilot to fall back on pitch-and-power references.

70. C — A blocked static port causes the altimeter and vertical speed indicator to freeze and renders the airspeed reading unreliable, because all three pitot-static instruments depend on accurate static pressure. The pilot must use the alternate static source if available. This is the classic blocked-static signature.

71. A — Increased load factor — produced by maneuvering or a steep turn — raises the stall speed because the wing must produce more lift and reaches the critical AOA at a higher airspeed. Reducing weight, extending flaps, and lower density altitude all lower stall speed. The accelerated stall is a direct consequence of load factor.

72. B — In ARROW, the W stands for Weight and balance data — one of the required-aboard documents. The other letters are Airworthiness, Registration, Radio station license (when required), and Operating limitations. The pilot verifies ARROW during preflight; absence makes the flight unlawful.

73. A — The annual inspection is required for all civil aircraft every 12 calendar months from the previous annual, performed by an authorized inspector. An airplane without a current annual is not airworthy regardless of other inspections. The 12-calendar-month interval is exam-tested precisely.

74. C — A 100-hour inspection is required in addition to the annual when an aircraft is used for hire or for flight instruction in an instructor-provided aircraft. The annual covers the same scope and can substitute for a 100-hour, but a 100-hour cannot substitute for an annual. CFI candidates teaching in their own airplane must keep both cycles current.

75. A — Class B airspace, surrounding the busiest airports, requires an explicit ATC clearance to enter. Class C and Class D require two-way radio communication but not clearance per se; Class E and G have no entry communication requirement for VFR. Class B's clearance requirement is the highest VFR entry barrier in the system.

76. D — Two-way radio communication must be established with ATC before entering Class C airspace, around moderately busy towered airports with radar approach control. Class A is IFR-only with explicit clearance; Class E above 14,500 ft has no VFR entry-communication requirement; Class G is uncontrolled. Establishing communication is not equivalent to a clearance — Class B requires the additional explicit clearance.

77. D — To carry passengers under Part 91, a pilot must have completed three takeoffs and landings within the preceding 90 days in the same category, class, and (if a type rating is required) type of aircraft. Tailwheel and night passenger carriage add parallel requirements. The 90-day window is exam-tested precisely.

78. C — A flight review under §61.56 must be completed within the preceding 24 calendar months and include at least 1 hour of ground training and 1 hour of flight training with an authorized instructor. The review covers Part 91 rules and maneuvers appropriate to the pilot. The 24-month interval is the headline FIA fact.

79. C — A flight instructor's recency-of-experience requirements under §61.197 are evaluated over the preceding 24 calendar months, with several alternative options for satisfaction including renewal courses and additional rating checkrides. An instructor who fails to satisfy any option may not exercise instructor privileges until reinstated.

80. D — §91.3 establishes the pilot in command as directly responsible for, and the final authority over, the operation of the aircraft. In an in-flight emergency, the PIC may deviate from any rule to the extent required to meet the emergency, reporting afterward as required. This authority is paired with full accountability.

81. A — Hypoxic hypoxia is caused by insufficient oxygen partial pressure reaching the blood, most commonly from reduced partial pressure at altitude. Hypemic hypoxia involves reduced blood-carrying capacity (carbon monoxide), stagnant involves circulation problems, and histotoxic involves cellular inability to use oxygen (alcohol). Hypoxic hypoxia is the form pilots most directly manage through altitude and supplemental oxygen.

82. A — The black-hole illusion occurs over featureless or unlit terrain at night, where the visual cues normally used to judge height on approach are missing. Pilots are tempted to descend low, producing landing-short accidents. The defense is reliance on instruments and a stabilized profile rather than the visual sight picture alone.

83. D — Spatial disorientation is the inability to determine one's position, attitude, and motion relative to the earth, arising from conflict among the body's orientation senses when visual reference is lost. It is not a sensation to ignore, a regulation, or a ventilation problem. The defense is trusting the flight instruments rather than the body's senses.

84. D — The IM SAFE personal self-assessment evaluates Illness, Medication, Stress, Alcohol, Fatigue, and Emotion. It is performed before every flight as an honest self-evaluation. A failed item should produce a no-go decision.

85. B — Atmospheric stability is determined by the lapse rate — the rate at which temperature decreases with altitude. A steep lapse rate favors instability; a shallow or inverted lapse rate favors stability. Latitude, moisture amount, and surface elevation are separate factors that combine with stability to produce specific weather.

86. D — A cold front produces a narrow band of intense, brief weather with a sharp wind shift and temperature drop at frontal passage — cumulus, possible thunderstorms, gusty winds. Warm fronts produce wide bands of prolonged precipitation; smooth conditions and persistent fog do not match the cold-front signature.

87. C — A warm front produces a wide band of stratus, prolonged steady precipitation, and low ceilings extending hundreds of miles ahead of the surface front. Narrow thunderstorm bands are cold-front signatures; cool dry conditions are post-frontal high-pressure signatures. Warm-front weather is less violent but lasts much longer than a cold-front pass.

88. D — The mature stage of a thunderstorm begins when precipitation reaches the surface and is the most violent stage because updrafts and downdrafts coexist with heavy rain, lightning, hail, and the strongest gust front. The cumulus stage features updrafts only; the dissipating stage is dominated by weakening downdrafts. Mature-stage cells are unsurvivable for light aircraft attempting penetration.

89. A — Structural icing requires two conditions simultaneously: visible moisture (cloud or precipitation) and aircraft surface temperatures at or below freezing. Either alone does not produce icing. Recognizing icing through both requirements lets the pilot identify icing risk across the full range of conditions.

90. A — Thunderstorm development requires three simultaneous ingredients: sufficient moisture, an unstable lapse rate, and a lifting mechanism. All three must be present together; removing any one prevents development. Recognizing this lets the pilot anticipate convective activity from forecast products.

91. C — AIRMET Zulu advises pilots of icing conditions and freezing levels. AIRMET Sierra covers IFR and mountain obscuration; AIRMET Tango covers turbulence and strong surface winds. Each AIRMET type has a defined subject area instructors and pilots must know by name.

92. A — A Convective SIGMET advises of severe convective weather — thunderstorms producing severe turbulence, hail, surface winds of 50 knots or more, and tornadoes. It is the strongest convective-weather warning short of a tornado watch. Routine turbulence and wind-shear advisories operate at lower thresholds.

93. B — A METAR is a routine observation of current weather at an airport, issued hourly with special reports as conditions change. A TAF is the forecast counterpart; warning products and route forecasts differ in purpose. METARs answer the question "what is the weather right now at this airport?"

94. D — Pilot reports describe conditions actually encountered in flight by other pilots, uniquely valuable because they confirm or contradict the forecast picture from real airborne experience. They are not satellite-generated, do not replace METARs and TAFs, and are not binding forecasts. Pilots are professionally obligated to make PIREPs as well as read them.

95. B — A standard briefing is the comprehensive briefing requested when the pilot has not received prior information about a planned flight. It covers adverse conditions, synopsis, current conditions, forecast en-route and destination weather, alternates, winds aloft, NOTAMs, and ATC delays. Abbreviated briefings update existing information; outlook briefings cover flights six or more hours away.

96. A — When known icing is encountered in an aircraft not approved for flight into known icing, the only correct response is to exit the icing conditions immediately by altitude or course change. Continuing or slowing increases ice accumulation; disabling pitot heat is dangerous. Avoidance is the defense; exit is the response when avoidance has failed.

97. A — A microburst encounter on approach produces, in sequence, an increasing headwind (apparent performance gain), then a powerful downdraft, then a tailwind (performance loss). The pilot's natural reactions — reducing power for the gain, then over-correcting for the sink — are exactly wrong. Avoidance is the only defense for light aircraft.

98. B — An RPM drop on a single magneto exceeding the manufacturer's allowable maximum indicates a faulty ignition component such as fouled spark plugs, defective magneto, or a bad lead. It is not normal and requires correction before flight. The dual-magneto design provides flight redundancy, but each must be healthy at run-up.

99. D — Hot, high-elevation, and heavy-load conditions produce elevated density altitude that substantially degrades takeoff and climb performance through reduced lift, thrust, and engine power. Performance is reduced — never identical or improved compared to a cool sea-level departure. Recognizing this prevents serious hot-summer accidents.

100. B — Wing contamination such as frost or ice disrupts airflow, reduces the maximum coefficient of lift, raises the stall speed, and degrades takeoff and climb performance. The effect can be dramatic even from a thin layer. All contamination must be removed before flight, regardless of how minor it appears.

101. B — A skidding cross-controlled base-to-final turn at low airspeed with the inside wing dropping is the classic precursor to a stall-spin accident in the traffic pattern — among the deadliest fatal-accident profiles in general aviation. It is not a normal turn, a chandelle, or a maneuver the stall horn prevents. The prevention discipline is to recognize the setup and go around.

102. A — A student pulling the yoke aft when the stall warning sounds is exhibiting a stress-driven pull-back rather than the trained AOA reduction. Pitot malfunction, normal recovery, and jammed elevator do not fit the pattern. The correction is repeated controlled demonstrations and the verbal cue of "release back pressure" rather than commanding aggressive nose-down inputs.

103. D — Before correcting a student who consistently flares high, the instructor must first determine whether the error is a slip (right plan, wrong execution) or a mistake (wrong plan based on

misunderstanding). Practice alone deepens a mistake; only a slip is corrected by guided repetition. Diagnose, then prescribe.

104. B — The most useful conceptual framing is that the airplane always stalls at the same angle of attack, but the airspeed at which the wing reaches that angle varies with weight, load factor, density altitude, configuration, and contamination. Teaching stalls as an airspeed event plants a misconception that fails in turns and contamination. AOA-centered thinking is the instructor's most important conceptual move.

105. B — A pilot relying on airspeed rather than AOA is most likely to be surprised by an accelerated stall in a steep coordinated turn at low airspeed, because load factor raises the stall speed above what the airspeed indicator suggests. Cruise, idle descent, and takeoff before rotation are not the surprise scenarios. Teaching AOA-centered thinking prevents this specific surprise.

106. A — Maneuvering speed (Va) is the maximum airspeed at which full deflection of a single control will not exceed the airplane's structural limit, because at or below Va the wing will stall before structural damage occurs. Above Va, severe turbulence or sudden control input can produce structural overload. Slowing to Va in significant turbulence protects the airplane structurally.

107. A — An aft CG within the certified envelope produces lower stall speed (the tail downforce required is reduced, lightening the effective wing load) and more difficult stall and spin recovery. The trade is accepted for a slight cruise gain. Beyond the aft limit, spin recovery may be impossible — the aft limit is the safety-critical boundary.

108. B — In a coordinated turn, the horizontal component of the lift vector — produced when the wings are banked — provides the centripetal force that turns the airplane. The vertical component still supports weight, requiring increased total lift. Neither thrust nor rudder turns the airplane; bank does, with rudder coordinating the turn.

109. C — Lateral stability — resistance to rolling around the longitudinal axis — is provided primarily by dihedral, the upward angle of the wings from horizontal. Dihedral causes a sideslipping airplane to roll back toward wings-level. Vertical stabilizer provides directional stability; trim and CG affect longitudinal stability.

110. A — The vertical stabilizer acts as a weathervane against the relative wind, providing directional stability around the vertical axis. Dihedral provides lateral stability; trim and horizontal stabilizer affect longitudinal stability. Each axis has its own primary stabilizing surface.

111. A — Aviate, navigate, communicate is the priority order during an engine failure: fly the airplane first, navigate to a chosen field second, communicate with ATC third. Reversing this priority has killed pilots who talked on the radio while losing control. The mnemonic is taught as a reflex until it operates without conscious thought.

112. C — The first action after an engine failure is to establish best-glide airspeed, maximizing the time and distance available to evaluate options and act. Restart attempts, radio calls, and cockpit preparation follow only after the airplane is flying the optimal glide. Restart actions before establishing the glide consume the pilot's only fixed resource — time aloft.

113. B — A go-around is a normal pilot decision that should be initiated early when an approach is not stabilized or predictable. It is not a last-resort emergency, a clearance-requiring maneuver, or a sign of failure. Teaching the go-around as a default response prevents many landing-phase accidents.

114. D — The sideslip (wing-low) method uses aileron into the wind to control drift and rudder opposite to keep the longitudinal axis aligned with the runway centerline. The result is a controlled slip that tracks the centerline through touchdown. Aileron away from the wind would drift the airplane away from the centerline.

115. B — The downwind leg is parallel to the landing runway but flown in the opposite direction, typically at pattern altitude. Upwind is the leg paralleling the runway after departure; crosswind is perpendicular at the departure end; base is perpendicular at the approach end. Knowing the legs by name is required for traffic-pattern operations.

116. C — Ground reference maneuvers teach the student that bank angle must vary with the wind component to keep a planned ground track, because the airplane drifts with the wind while the desired path is fixed over the ground. The bank is steepest where groundspeed is highest. This wind-correction discipline is the maneuver's central teaching purpose.

117. D — Wake-turbulence avoidance behind a heavy aircraft on takeoff calls for the following aircraft to rotate prior to the heavy aircraft's rotation point and climb above its flight path, staying above the descending wake. Taking off underneath, departing perpendicular, or penetrating at high AOA are unsafe. The principle is to stay above and upwind of where the wake will be.

118. C — Mechanical turbulence is produced by strong winds flowing across irregular terrain or obstacles, particularly on the leeward side of mountains and buildings. Stable air over level terrain, smooth jet streams, and inversion layers do not generate mechanical turbulence by their nature. Recognizing it lets the pilot anticipate rough air downwind of terrain features.

119. C — Lingering effects and hangover symptoms can persist beyond the legal minimum waiting period after alcohol consumption, impairing a pilot who believes themselves fit. The regulatory waiting period is a legal floor, not a safety guarantee. Alcohol also aggravates hypoxia through histotoxic effects at altitude.

120. B — Over-the-counter status does not mean a medication is safe for flight; many cold, allergy, and pain remedies carry warnings against operating machinery that apply fully to flying. The pilot should understand the effects of any substance and the condition it treats before flight. "Available without prescription" is not a clearance for cockpit use.

121. B — Negative transfer occurs when earlier learning interferes with the acquisition of new learning, such as a habit appropriate to one aircraft causing errors in another. Smooth transfer between types is positive transfer; absent prior experience is no transfer at all; rewards are unrelated. Anticipating negative transfer helps the instructor anticipate where students will struggle.

122. C — A constant-speed propeller allows the pilot to set RPM independently of throttle position, with propeller pitch adjusting automatically to maintain the selected RPM. The pilot manages manifold

pressure with the throttle and RPM with the propeller control. This enables optimization of climb, cruise, and descent that a fixed-pitch propeller cannot match.

123. A — Carburetor heat routes warm air to the carburetor, and a slight RPM drop during the run-up confirms that the heated air is reaching it — the heated air is less dense, producing the expected drop. No drop would suggest the heat system is not functioning. The check verifies the system before it is needed in flight.

124. C — The critical angle of attack of a given wing in a given clean configuration is essentially constant, regardless of weight, bank angle, or density altitude. What varies is the airspeed at which the wing is forced up to that angle. This single concept is the foundation of teaching stalls correctly.

125. B — Maneuvering speed (Va) is the maximum airspeed at which full deflection of a single control will not exceed the airplane's structural limit, because at or below Va the wing will stall before structural damage occurs. It is not an icing, autopilot, or flap-extension limit. Above Va, a sudden full-deflection input can produce structural damage.

126. D — The instructor's demonstration must be performed exactly to the standard the student is expected to reach, because the law of primacy makes the first model the most enduring. Deliberate imperfections plant errors; off-topic commentary distracts; skipping the explanation breaks the method's sequence. Instructor proficiency in the maneuver being demonstrated is non-negotiable.

127. D — An aircraft used for hire or for flight instruction in an instructor-provided airplane must have both a current annual inspection (the baseline for all civil aircraft) and a current 100-hour inspection (added for use-for-hire and instructor-provided cases). Neither alone is sufficient. The annual can substitute for a 100-hour, but not vice versa.

128. C — The flight instructor recency rule under §61.197 lives in 14 CFR Part 61 Subpart H, which governs flight instructors. Part 43 covers maintenance, Part 67 covers medical, and Part 71 covers airspace structure. Knowing which part governs which subject is foundational regulatory navigation for the FIA.

129. A — A solo endorsement certifies that the student has received the required training and is proficient to solo the specific make and model of aircraft, based on the instructor's personal determination. Fee payment, medical currency, and age are separate matters not certified by this endorsement. The endorsement is the instructor's professional certification of solo readiness.

130. B — The antidote to resignation ("What's the use?") is "I'm not helpless. I can make a difference." Each hazardous attitude has its specific paired antidote that the pilot consciously substitutes. Recognizing the attitude is half the corrective work; deliberately applying its antidote completes it.

131. B — A 75% score on the FIA leaves a relatively large number of ACS codes the examiner must revisit during the oral portion of the practical test, producing a longer and more probing oral exam. The score does not eliminate the oral, change fees, or have no effect — it directly shapes the oral the candidate will face. Higher written scores hand examiners fewer codes.

132. C — A lesson plan is a flexible guide that supports the lesson's objective and adapts to the individual student, not a rigid script or regulatory document. It serves the preparation step of the teaching process by ensuring the lesson has a clear objective, organized content, and connections to past and future learning.

133. B — A flight review under §61.56 must include at least 1 hour of ground training and 1 hour of flight training with an authorized instructor. The review must cover Part 91 rules and maneuvers appropriate to the pilot. Completion is logged with the instructor's endorsement.

134. D — ARROW captures the required-aboard documents: Airworthiness certificate, Registration, Radio station license (when required for international ops), Operating limitations (including the flight manual), and Weight-and-balance data. CARES, FREES, and POWER are not standard mnemonics. The pilot verifies ARROW during preflight; absence makes the flight unlawful.

135. B — Hypoxia degrades judgment before the pilot recognizes the impairment, which is the central danger of the condition. By the time symptoms might prompt concern, the impaired judgment caused by hypoxia may prevent the pilot from acting. The defense is anticipation — oxygen and altitude discipline — not symptom recognition.

136. A — When a student displays projection — blaming the airplane for personal errors — the correct response is to reduce stress, restore an earlier success, and rebuild a low-threat climate so the student can re-engage. Aggressive confrontation deepens the defense; reporting and reassignment are not appropriate. Defense mechanisms signal stalled learning, not a defective student.

137. D — The law of primacy holds that what is learned first creates the strongest and most lasting impression, which is why teaching a maneuver correctly the first time is more efficient than fixing it later. Unlearning a wrong technique and replacing it is far more costly than teaching correctly from the start. Primacy is the operational reason for "right the first time" discipline.

138. D — When known icing is encountered in an aircraft not approved for flight into known icing, the only correct response is to exit the icing conditions immediately by altitude or course change. Continuing, slowing, or disabling pitot heat increases the danger. Avoidance is the defense; exit is the response when avoidance has failed.

139. C — The first action in the standardized stall recovery is to reduce angle of attack by lowering the pitch attitude, because nothing else recovers the wing once it is stalled. Adding power before reducing AOA can deepen the stall through the pitch-up tendency. The sequence matters: AOA first, then bank level, then power, then drag-device cleanup.

140. C — VFR night operations require functioning position lights (red, green, white), an anti-collision light system, and an electrical source adequate to power them. Pitot heat is required only for IFR or flight into known icing; a second altimeter and a constant-speed propeller are not VFR night equipment requirements. Equipment list for night VFR is exam-tested directly.

141. D — Useful load remaining for fuel = 2,300 − 1,500 − 180 − 170 − 50 = 400 lb. At 6 lb/gal, that is 400 ÷ 6 ≈ 66.7 gallons. The discipline of computing weight-and-balance honestly for every loaded condition prevents overgross takeoffs.

142. C — Stall speed at increased load factor follows $Vs(n) = Vs1 \times \sqrt{n}$. At 2 G, the stall speed is $60 \times \sqrt{2} \approx 84.85$ KIAS, rounded to 85 KIAS. The same formula governs the accelerated stall at any load factor and is the reason a tight turn at low airspeed is dangerous.

143. C — Wing flaps deployed to a landing position lower the stall speed and improve low-speed handling, which is precisely why they are used for landing. They do not eliminate rudder coordination, disable the stall warning, or affect drag in the manner described in the wrong options. The stall-speed reduction is the safety benefit at approach airspeed.

144. D — A pilot at high density altitude in a normally aspirated airplane experiences reduced engine power (thinner intake air) and longer takeoff distance. Maneuvering speed, climb performance, and fuel consumption do not improve at altitude. The combined power-and-lift reduction is what makes hot-high-humid takeoffs hazardous.

145. C — The conclusion of a lesson exploits the law of recency, since what is learned last is best remembered. The introduction engages motivation, development builds known-to-unknown, and the conclusion locks in key points through summary. The structure deliberately applies the laws of learning to each lesson.

146. A — Maneuvering speed decreases at lighter operating weights, counterintuitively, because a lighter airplane is accelerated more easily by a given aerodynamic force and reaches limit G at a lower airspeed. The heavier the airplane, the higher its Va. Va always remains relevant — the relationship simply shifts with weight.

147. B — A skidding cross-controlled base-to-final turn at low airspeed creates the conditions for a stall-spin accident in the traffic pattern — among the deadliest fatal-accident profiles in general aviation. It is not a safe go-around, a controlled short-field approach, or a maneuver the stall horn prevents. The prevention discipline is to recognize the setup and go around.

148. D — A flight instructor providing instruction in an instructor-provided aircraft must ensure the aircraft has both a current annual inspection (the baseline for all civil aircraft) and a current 100-hour inspection cycle. The pitot-static and transponder inspections are required only for IFR or transponder operations, and the instructor's flight review is a separate matter from aircraft inspection.

149. C — AIRMET Sierra advises pilots of IFR conditions and mountain obscuration affecting flight operations. AIRMET Tango covers turbulence and strong surface winds; AIRMET Zulu covers icing and freezing levels; convective activity is the Convective SIGMET subject. Each AIRMET type has a defined subject area pilots must know by name.

150. C — A cold front produces a narrow band of intense, brief weather with a sharp wind shift and temperature drop at frontal passage — cumulus, possible thunderstorms, gusty winds. Warm fronts produce wide bands of prolonged precipitation; cool dry air is a post-frontal high-pressure signature; severe clear-air turbulence is unrelated to cold-front passage. The narrow-and-intense pattern is uniquely the cold front.