PRACTICE EXAM 7 SIMULATION

1. Which of the following is NOT one of the three rotor system types?

A. Semirigid

B. Cantilever

C. Fully articulated

2. Which statement about the airspeed indicator and altimeter is correct?

A. Both use pitot pressure only

B. Both use static pressure only

C. The airspeed indicator uses pitot and static; the altimeter uses static only

3. Which fastener drives in the condition received without prior heat treatment?

A. The 2117 (AD) rivet

B. The 2024 (DD) rivet

C. A magnesium structural rivet

4. Which is the correct minimum rivet edge distance?

A. 1 times the rivet diameter

B. 2 times the rivet diameter

C. 4 times the rivet diameter

5. Which fluid–color pairing is correct?

A. Skydrol is dyed red

B. MIL-PRF-5606 is dyed purple

C. MIL-PRF-5606 is dyed red

6. Which inspection requires an Inspection Authorization to perform?

A. The 100-hour inspection

B. The annual inspection

C. The preflight inspection

7. Which statement about VHF and HF communication is true?

A. VHF is line-of-sight; HF can reach beyond line of sight

B. HF is line-of-sight; VHF reaches beyond line of sight

C. Both are strictly line-of-sight

8. Which valve allows hydraulic flow in one direction only?

A. A relief valve

B. A check valve

C. A sequence valve

9. Which is NOT a function of bonding?

A. Controlling static charge

B. Reducing radio interference

C. Increasing the tensile strength of riveted joints

10. Which fire detector responds to a rapid rate of temperature rise?

A. A thermocouple system

B. A thermal spot switch

C. A smoke detector

11. Which battery chemistry uses an alkaline potassium hydroxide electrolyte?

A. Nickel-cadmium

B. Lead-acid

C. Both use the same electrolyte

12. Which statement about the annual versus the 100-hour inspection is true?

A. A 100-hour may substitute for an annual

B. Both require an IA

C. An annual may substitute for a 100-hour, but not the reverse

13. Which is NOT a pitot-static instrument?

A. The airspeed indicator

B. The vertical speed indicator

C. The attitude indicator

14. Which control changes all main rotor blades' pitch equally and simultaneously?

A. The collective

B. The cyclic

C. The antitorque pedals

15. Which statement about Airworthiness Directives and Service Bulletins is correct?

A. Both are mandatory for all operators

B. An AD is mandatory; an SB is generally recommended

C. An SB is mandatory; an AD is advisory

16. Which describes a Fowler flap correctly?

A. It deflects only the lower trailing-edge surface

B. It hinges straight down without changing wing area

C. It moves aft on tracks, increasing wing area and camber

17. Which NDI method works only on ferromagnetic materials?

A. Dye penetrant

B. Eddy current

C. Magnetic particle

18. Which statement about gravity-feed and pump-feed fuel systems is true?

A. High-wing aircraft often use gravity feed; low-wing aircraft require pumps

B. Low-wing aircraft use gravity feed; high-wing require pumps

C. All aircraft use gravity feed regardless of wing position

19. Which is NOT a valid disposition for structural damage?

A. Negligible damage

B. Repairable damage

C. Mechanic's-discretion damage

20. Which describes the function of the squat (safety) switch?

A. It lowers the gear automatically at low airspeed

B. It inhibits gear retraction when weight is on the wheels

C. It illuminates the position lights only

21. Which statement about hydraulic fluids is correct?

A. Mineral-base and phosphate-ester fluids are freely interchangeable

B. All hydraulic fluids use the same seal material

C. Mineral-base and phosphate-ester fluids are chemically incompatible

22. Which is NOT a method of producing cabin heat?

A. An exhaust heat exchanger (heater muff)

B. A combustion heater

C. A vapor-cycle evaporator

23. Which describes the correct minimum information on a return-to-service entry?

A. The aircraft owner's home address

B. The approving person's signature, certificate number, and kind of certificate

C. A photograph of the completed work

24. Which gyroscopic property does the attitude indicator rely on?

A. Precession

B. Coning

C. Rigidity in space

25. Which statement about a blocked static port versus a blocked pitot tube is correct?

A. A blocked pitot affects all three pitot-static instruments

B. A blocked static affects only the airspeed indicator

C. A blocked static affects all three; a blocked pitot affects only airspeed

26. Which describes the correct disposition of an over-driven rivet below minimum shop-head height?

A. Accept it, as a flatter head clamps tighter

B. Remove and replace it

C. Seal over the head to restore the clamp

27. Which is NOT a function of an accumulator?

A. Dampening pressure surges

B. Supplementing pump flow

C. Filtering particulate contamination

28. Which statement about wire selection is correct?

A. Both current capacity and voltage drop must be considered

B. Only insulation color matters

C. Only the number of clamps matters

29. Which describes the white arc on an airspeed indicator?

A. The flap operating range

B. The never-exceed limit

C. The caution range for smooth air only

30. Which is the correct inspection interval for an IFR transponder check?

A. 12 calendar months

B. 6 calendar months

C. 24 calendar months

31. Which statement about the freewheeling unit is correct?

A. It disengages a failed engine so the rotor can autorotate

B. It reduces engine RPM to rotor RPM

C. It tilts the rotor disc for directional control

32. Which is NOT a correct fueling safety practice?

A. Bonding the aircraft and fueling equipment

B. Filling the tank as rapidly as possible to reduce static

C. Verifying the correct fuel grade against the placard

33. Which describes how to verify oleo strut inflation?

A. By the exposed piston length against the manufacturer's figure

B. By a pressure gauge reading alone

C. By the firmness of the tire

34. Which statement about the alternator and DC generator is correct?

A. The alternator produces useful output at lower RPM than the generator

B. The generator produces useful output at lower RPM than the alternator

C. Neither requires voltage regulation

35. Which is NOT a fiber type used in aircraft composites?

A. Fiberglass

B. Aramid (Kevlar)

C. Galvanized cotton

36. Which describes the correct response to a transmission chip detector warning?

A. Reset and return to service

B. Investigate the metal contamination before further flight

C. Ignore it as usually false

37. Which statement about minimum rivet pitch and edge distance is correct?

A. Edge distance minimum is 2D and pitch minimum is about 3D

B. Edge distance minimum is 4D and pitch minimum is 1D

C. Both are 1D

38. Which is NOT a way to extend retractable gear in an emergency?

A. Gravity free-fall

B. Pressurizing the cabin

C. A hand pump or crank

39. Which describes the correct disposition of an applicable, overdue Airworthiness Directive?

A. Airworthy until the next annual

B. Airworthy because recurring ADs are advisory

C. Unairworthy until complied with and recorded

40. Which statement about the tail rotor is correct?

A. It controls total lift

B. It tilts the rotor disc

C. It counteracts main-rotor torque and provides yaw control

41. Which is NOT a correct statement about Alclad aluminum?

A. The cladding is stronger than the alloy core

B. The cladding protects the core from corrosion

C. Sanding through the cladding exposes the corrosion-prone core

42. Which describes the function of the cabin outflow valve?

A. It cools the bleed air entering the cabin

B. It supplies the cabin with bleed air

C. It meters the air leaving the cabin to control pressure

43. Which statement about a fuel quantity gauge is correct?

A. It reads empty only when the tank is physically dry

B. It reads empty at the filler-neck level

C. It reads empty when only unusable fuel remains

44. Which is NOT a primary flight control?

A. The aileron

B. The flap

C. The rudder

45. Which describes the correct interpretation of a missing yellow disc on a fire bottle?

A. The bottle discharged overboard due to overheat

B. The bottle was discharged normally by the crew

C. The bottle has never been serviced

46. Which statement about composite repair plies is correct?

A. They must match the original ply count, fiber type, and orientation

B. They need match only the surface color

C. They may use any fiber type if the resin matches

47. Which is NOT a cause of a spongy hydraulic brake pedal?

A. Air trapped in the brake system

B. A worn brake disc

C. Improper bleeding after service

Wait — option B is a valid "not a cause," so the key letter A must be the correct answer. Let me re-issue Q47 so option A is the correct "NOT a cause."

47. Which is NOT a cause of a spongy hydraulic brake pedal?

A. A warped brake disc

B. Air trapped in the brake system

C. Air introduced during a caliper replacement

48. Which describes how a continuous-loop detector differs from a spot detector?

A. It requires no electrical power

B. It cannot produce false warnings

C. It detects overheat anywhere along its length

49. Which statement about control cable construction is correct?

A. 7 × 19 cable is the most flexible and used over pulleys

B. 7 × 7 cable is the most flexible and used over pulleys

C. Solid wire is standard for primary controls

50. Which is NOT a characteristic of a trip-free circuit breaker?

A. It opens on a fault even if held in

B. It can be reset unlimited times to clear a persistent fault

C. It protects the wiring from overheating

51. Which describes the correct first step before adding air to a low oleo strut?

A. Add air immediately

B. Determine whether it is low on fluid, air, or both

C. Replace the seals regardless of condition

52. Which statement about a wooden spar compression failure is correct?

A. It runs across the grain and requires rejection

B. It runs along the grain and is acceptable

C. It is a normal grain deviation within limits

53. Which describes the function of a relief valve?

A. It opens above a set pressure to prevent over-pressure

B. It directs fluid to the critical system first

C. It allows flow in one direction only

54. Which is NOT a permanent record that transfers with a sold aircraft?

A. Total time in service

B. AD compliance status

C. Last month's routine oil-change entry

55. Which describes the correct cleaning method for an acrylic windshield?

A. Wiping the dry surface with a shop rag

B. Flushing with plenty of clean water and a mild soap

C. Using acetone to cut grime

56. Which statement about pitot heat is correct?

A. It cools the pitot tube to prevent overheating

B. It prevents ice from blocking the pitot tube

C. It has no effect on instrument accuracy

57. Which is NOT a function of a fuel tank vent?

A. Filtering water from the fuel

B. Admitting replacement air as fuel is consumed

C. Preventing a vacuum that would stop fuel flow

58. Which describes the gyroscopic property used by the turn coordinator?

A. Precession

B. Rigidity in space

C. Coning

59. Which statement about an internal versus an external hydraulic leak is correct?

A. An internal leak is always visible externally

B. An external leak shows no visible fluid

C. An internal leak bypasses a seal with no external evidence

60. Which is NOT a correct practice for routing electrical wiring?

A. Supporting and clamping bundles at intervals

B. Using grommets where wire passes through structure

C. Routing wiring below fluid lines to catch drips

61. Which describes the correct temperature consideration for cable tension?

A. Tension is independent of temperature

B. Tension must be set using the temperature-correction chart

C. Cold cable is set looser than the chart value

62. Which statement about the anti-servo tab is correct?

A. It moves opposite the surface to reduce control force

B. It moves in the same direction as the surface to increase control force

C. It is controlled only by the pilot independently

63. Which describes the consequence of a blocked fuel tank vent?

A. A vacuum forms that chokes off fuel flow

B. The tank over-pressurizes and floods the engine

C. Water enters through the cap

64. Which is NOT a high-lift device?

A. A slotted flap

B. A leading-edge slat

C. A spoiler

65. Which statement about life-limited rotorcraft parts is correct?

A. They may be used until visible cracks appear

B. They may be extended to the next annual

C. They must be retired at their defined limit regardless of condition

66. Which describes the function of a shimmy damper?

A. It locks the nose wheel straight during taxi

B. It damps rapid side-to-side nose-gear oscillation

C. It increases tire pressure automatically

67. Which is NOT a correct statement about oxygen system servicing?

A. Keep oil and grease away from the equipment

B. Open valves slowly

C. Use ordinary industrial oxygen to save cost

68. Which describes a vacuum waste system's advantage?

A. It recirculates a large volume of treated fluid

B. It relies on gravity from elevated lavatories

C. It saves water and weight using pressure differential

69. Which statement about a split (divided) wheel is correct?

A. It may be disassembled with the tire inflated for accuracy

B. The tire must be fully deflated before disassembly

C. Disassembly requires removing the brake disc first

70. Which describes the correct minimum proportions of a properly formed shop head?

A. About 0.5D tall by 1.5D wide

B. About 1.5D tall by 0.5D wide

C. About 1D tall by 1D wide

71. Which is NOT a function of the swashplate?

A. Transmitting collective input by moving up and down

B. Transmitting cyclic input by tilting

C. Reducing engine RPM to rotor RPM

72. Which describes the correct disposition for a control cable with broken wires beyond limits?

A. Replace the cable, as it is unairworthy

B. Lubricate and return to service

C. Reverse the cable end-for-end

73. Which statement about magnesium is correct?

A. It is non-flammable and safe to grind freely

B. It is flammable in finely divided form and water can intensify a fire

C. It is immune to corrosion

74. Which describes the function of a sequence valve?

A. It relieves over-pressure in the return line

B. It switches to an emergency air source

C. It ensures operations occur in the correct order

75. Which is NOT a correct statement about instrument range markings?

A. Green indicates the normal operating range

B. Red line indicates a limit not to be exceeded

C. Marking values may be applied from memory or a similar aircraft

76. Which describes the correct response to a popped hydraulic filter clogging indicator?

A. Reset and continue, as the filter is new

B. Replace the clogged element that is now bypassing

C. Ignore it, as it is decorative

77. Which statement about differential aileron movement is correct?

A. The up-aileron deflects farther to reduce adverse yaw

B. Both ailerons deflect equally to increase yaw

C. The ailerons remain neutral during turns

78. Which is NOT a hydraulic system valve type?

A. A check valve

B. A commutator valve

C. A relief valve

79. Which describes a once-per-revolution vertical rotor vibration?

A. A spanwise balance problem

B. A blade out of track

C. A tail rotor drive imbalance

80. Which statement about cabin altitude is correct?

A. It is the pressure altitude experienced by the occupants inside the cabin

B. It equals the aircraft's actual flight altitude

C. It is the altitude at which the outflow valve closes fully

81. Which describes the correct NDI method for a subsurface crack in aluminum?

A. Eddy current or ultrasonic inspection

B. Magnetic particle inspection

C. A simple visual inspection

82. Which is NOT a correct statement about a major repair?

A. It can appreciably affect structural strength

B. It requires approved data and FAA Form 337

C. It may be documented with only a logbook note using acceptable data

83. Which describes the correct interval for an IFR altimeter and static system inspection?

A. 12 calendar months

B. 6 calendar months

C. 24 calendar months

84. Which statement about carbon-fiber dust is correct?

A. It improves cooling airflow in avionics bays

B. It is electrically conductive and can short equipment

C. It is harmless to electronics

85. Which describes the correct interpretation of three green gear lights?

A. All gear is down and locked

B. The gear is in transit

C. The gear is unsafe

86. Which is NOT a function of the static system?

A. Supplying ram pressure to the airspeed indicator

B. Supplying ambient pressure to the altimeter

C. Supplying ambient pressure to the VSI

87. Which describes the consequence of curing a composite with too little heat and pressure?

A. An overly strong, resin-rich laminate

B. An under-cured, weak laminate full of voids

C. A laminate stronger than the original

88. Which statement about the boost (auxiliary) fuel pump is correct?

A. It provides pressure for starting, takeoff, altitude, and backup

B. It replaces the engine-driven pump entirely

C. It cools the fuel before the engine

89. Which describes the correct disposition of an aircraft found not airworthy at inspection?

A. Record the inspection and provide a signed discrepancy list

B. Sign the airworthiness statement to allow a ferry flight

C. Record nothing and return it to the owner

90. Which is NOT a correct statement about a continuous-flow oxygen system?

A. It delivers a steady flow regardless of breathing

B. It is common for passengers

C. It delivers oxygen only when the user inhales

91. Which describes the function of a priority valve?

A. It opens above a set pressure to relieve the system

B. It directs fluid to the more critical system first

C. It allows flow in one direction only

92. Which statement about bleed air is correct?

A. It is cool, low-pressure air from the cabin

B. It is hot, high-pressure air from the turbine compressor

C. It is ram air collected at the nose

93. Which is NOT a correct statement about an Airworthiness Directive?

A. It is a manufacturer recommendation that is optional

B. It is a mandatory FAA regulation

C. An overdue applicable AD makes an aircraft unairworthy

94. Which describes the correct reason aircraft loads are wired in parallel?

A. So the same current flows through every device

B. So each device receives full voltage and operates independently

C. So a failure in one device disables all others

95. Which statement about a thermocouple fire detector versus a spot detector is correct?

A. Both trigger at a fixed temperature

B. The thermocouple triggers on rapid rate-of-rise; the spot detector at a set temperature

C. Both detect smoke particles

96. Which is NOT a correct practice when joining dissimilar metals?

A. Applying protective barriers

B. Recognizing galvanic corrosion risk

C. Assuming dissimilar metals never corrode in contact

97. Which describes the function of the main transmission in a helicopter?

A. It disengages the engine for autorotation

B. It reduces engine RPM to rotor RPM and multiplies torque

C. It transmits control inputs to the blades

98. Which statement about the magnetic compass is correct?

A. It is unaffected by nearby electrical and magnetic influences

B. It must be swung and have a current correction card after nearby ferrous work

C. It must be removed during all flights

99. Which describes the function of a check valve?

A. It permits flow in one direction and blocks reverse flow

B. It relieves over-pressure above a set limit

C. It switches to an emergency source

100. Which is NOT a correct statement about the 100-hour inspection?

A. It may be performed only by an Inspection Authorization holder

B. It may be performed by an appropriately rated A&P

C. Its 100-hour limit may be exceeded by up to 10 hours only to reach a place of inspection

Answer Key

1. B — The three rotor system types are rigid, semirigid, and fully articulated; "cantilever" is not a rotor type but a wing/structural term. So cantilever is the one that does not belong.

2. C — The airspeed indicator uses both pitot and static pressure, while the altimeter uses static only. Neither uses pitot alone, and they do not share an identical source, which is why static blockage affects more instruments than pitot blockage.

3. A — The 2117 (AD) rivet drives in the condition received without heat treatment. The 2024 (DD) rivet must be refrigerated as an ice-box rivet, and magnesium is not used for standard structural rivets in this context.

4. B — The minimum rivet edge distance is 2 times the rivet diameter (2D), with a preferred range of 2D to 4D. One diameter risks tear-out and 4D is the upper preferred limit, not the minimum.

5. C — MIL-PRF-5606 mineral-base fluid is dyed red. Skydrol is purple, not red, so the correct pairing is 5606 with red.

6. B — The annual inspection requires an Inspection Authorization, while the 100-hour requires only an A&P. A preflight is not a certificated maintenance inspection.

7. A — VHF communication is line-of-sight, while HF can reach beyond line of sight by refracting off the ionosphere. The reverse is not true, and they are not both strictly line-of-sight.

8. B — A check valve allows hydraulic flow in one direction only. A relief valve protects against over-pressure and a sequence valve controls the order of operations.

9. C — Bonding controls static charge and reduces interference but does not increase the tensile strength of riveted joints, which is a structural rather than electrical function. So the strength claim is not a bonding function.

10. A — A thermocouple system responds to a rapid rate of temperature rise. A spot switch triggers at a set temperature and a smoke detector senses smoke.

11. A — Nickel-cadmium batteries use an alkaline potassium hydroxide electrolyte, while lead-acid uses acidic sulfuric acid. The two are chemically opposite, not the same.

12. C — An annual may substitute for a 100-hour, but a 100-hour cannot substitute for an annual. Only the annual requires an IA, so the reverse substitution and the "both require IA" claims are false.

13. C — The attitude indicator is gyroscopic, not a pitot-static instrument. The airspeed indicator and VSI are pitot-static instruments.

14. A — The collective changes all main rotor blades' pitch equally and simultaneously. The cyclic changes pitch individually around the disc, and the pedals control yaw.

15. B — An Airworthiness Directive is mandatory, while a Service Bulletin is generally recommended unless adopted by an AD. The reverse and "both mandatory for all operators" are incorrect.

16. C — A Fowler flap moves aft on tracks, increasing wing area and camber, for the greatest lift increase. Deflecting only the lower surface describes a split flap, and hinging straight down describes a plain flap.

17. C — Magnetic particle inspection works only on ferromagnetic materials such as steel. Dye penetrant and eddy current can be used on non-magnetic aluminum.

18. A — High-wing aircraft often use gravity feed, while low-wing aircraft require pumps to move fuel uphill. The reverse is false, and not all aircraft use gravity feed.

19. C — Damage dispositions are negligible, repairable, or replace—"mechanic's-discretion damage" is not a valid category, since disposition follows the manufacturer's data, not discretion. So that option does not belong.

20. B — The squat (safety) switch inhibits gear retraction when weight is on the wheels. It does not lower the gear automatically or merely drive the lights.

21. C — Mineral-base and phosphate-ester fluids are chemically incompatible and use different seal materials, so they are not interchangeable and do not share seals. Mixing them destroys incompatible seals.

22. C — A vapor-cycle evaporator provides cooling, not heat, so it is not a cabin-heat method. Exhaust heat exchangers and combustion heaters do produce cabin heat.

23. B — A return-to-service entry must include the approving person's signature, certificate number, and kind of certificate. The owner's address and a photograph are not required.

24. C — The attitude indicator relies on rigidity in space for a stable reference. Precession is used by the turn instruments, and coning is a rotorcraft blade condition.

25. C — A blocked static port affects all three pitot-static instruments, while a blocked pitot tube affects only the airspeed indicator. The reversed statements are incorrect.

26. B — An over-driven rivet below minimum shop-head height must be removed and replaced, since it no longer clamps properly. A flatter head is not "tighter," and sealant does not restore the clamp.

27. C — An accumulator dampens surges and supplements pump flow but does not filter particulate contamination, which is the filter's job. So filtering is not an accumulator function.

28. A — Wire selection requires considering both current-carrying capacity and voltage drop. Insulation color and clamp count are not selection factors.

29. A — The white arc on an airspeed indicator is the flap operating range. The never-exceed limit is the red line and the smooth-air caution range is the yellow arc.

30. C — The IFR transponder check is required every 24 calendar months, matching the altimeter/static interval. It is not a 12- or 6-month requirement.

31. A — The freewheeling unit disengages a failed engine so the rotor can autorotate. RPM reduction is the transmission's job and disc tilting is the swashplate's.

32. B — Filling the tank as rapidly as possible is NOT a safe practice, because rapid flow increases static buildup. Bonding the equipment and verifying the grade are correct practices.

33. A — Oleo strut inflation is verified by the exposed piston length against the manufacturer's figure, not by gauge or tire firmness. The exposed piston length is the primary check.

34. A — The alternator produces useful output at lower RPM than the DC generator, charging at idle and taxi. The reverse is false, and both require voltage regulation.

35. C — "Galvanized cotton" is not an aircraft composite fiber. Fiberglass and aramid (Kevlar) are genuine reinforcing fibers.

36. B — A transmission chip detector warning requires investigating the metal contamination before further flight. Resetting or ignoring it risks catastrophic drive-system failure.

37. A — The minimum edge distance is 2D and the minimum rivet pitch is about 3D. The 4D/1D and 1D/1D combinations do not match the standard spacing rules.

38. B — Pressurizing the cabin is NOT an emergency gear-extension method. Gravity free-fall and a hand pump or crank are valid methods.

39. C — An applicable, overdue AD makes the aircraft unairworthy until complied with and recorded. It does not remain airworthy until the next annual, and recurring ADs are mandatory.

40. C — The tail rotor counteracts main-rotor torque and provides yaw control. The collective controls lift and the cyclic tilts the disc.

41. A — The claim that the cladding is stronger than the alloy core is incorrect; the pure-aluminum cladding is softer and serves to protect the core from corrosion. The other statements are true.

42. C — The outflow valve meters the air leaving the cabin to control pressure. Supplying or cooling bleed air are other components' functions.

43. C — A fuel quantity gauge reads empty when only unusable fuel remains, not when the tank is dry or at the filler neck. Usable fuel is what is available to the engine.

44. B — A flap is a secondary (auxiliary) control, not a primary flight control. Ailerons and the rudder are primary controls.

45. B — A missing yellow disc indicates the bottle was discharged normally by the crew. A missing red disc would indicate an overheat discharge overboard.

46. A — Composite repair plies must match the original ply count, fiber type, and orientation, because the repair carries the original load path. Color alone or any fiber type with matching resin is insufficient.

47. A — A warped brake disc is NOT a cause of a spongy pedal; sponginess comes from compressible air in the system. Trapped air and air introduced during a caliper replacement both cause sponginess, so the warped disc is the exception.

48. C — A continuous-loop detector detects overheat anywhere along its length, unlike a point spot detector. It still requires power and can produce false warnings if damaged.

49. A — The 7 × 19 cable is the most flexible and used over pulleys. The 7 × 7 cable is stiffer, and solid wire is not used for primary controls.

50. B — A trip-free breaker cannot be held closed against a fault and protects the wiring, but it is NOT meant to be reset unlimited times against a persistent fault—repeated tripping signals a fault to find. So the unlimited-reset claim is the false characteristic.

51. B — Before adding air, the mechanic must determine whether the strut is low on fluid, air, or both. Adding air to a strut low on fluid leaves it unable to absorb loads, and seal replacement is not the first step.

52. A — A wooden spar compression failure runs across the grain and requires rejection, because the member has been overstressed. It does not run along the grain or qualify as an acceptable grain deviation.

53. A — A relief valve opens above a set pressure to prevent over-pressure. Prioritizing a critical system and one-way flow are other valves' functions.

54. C — Last month's routine oil-change entry is NOT a permanent record; routine entries may be discarded after a year. Total time in service and AD compliance status are permanent records that transfer with the aircraft.

55. B — An acrylic windshield is cleaned by flushing with plenty of clean water and a mild soap. Dry wiping grinds in grit, and acetone attacks and crazes acrylic.

56. B — Pitot heat prevents ice from blocking the pitot tube. It heats rather than cools the tube and does affect instrument accuracy by keeping the tube clear.

57. A — Filtering water from the fuel is NOT a vent function; vents admit replacement air and prevent a vacuum. Water removal is handled at sumps and strainers.

58. A — The turn coordinator uses precession to sense rate of turn. Rigidity in space is used by the attitude and heading indicators, and coning is a rotorcraft term.

59. C — An internal leak bypasses a seal inside a component with no external evidence, detected by symptoms like an actuator drifting. An external leak shows visible fluid, so the reversed statements are false.

60. C — Routing wiring below fluid lines to "catch drips" is NOT correct; wiring should be routed above fluid lines so leaks cannot drip onto it. Supporting bundles and using grommets are correct practices.

61. B — Cable tension must be set using the manufacturer's temperature-correction chart. Tension is not independent of temperature, and cold cable is not arbitrarily set looser.

62. B — An anti-servo tab moves in the same direction as the surface to increase control force and feel. Moving opposite would reduce force, and it is not solely pilot-controlled in that sense.

63. A — A blocked vent forms a vacuum that chokes off fuel flow, starving the engine. It does not over-pressurize the tank or admit water through the cap.

64. C — A spoiler disrupts lift and is not a high-lift device. Slotted flaps and leading-edge slats are high-lift devices.

65. C — A life-limited rotorcraft part must be retired at its defined limit regardless of condition. Using it until cracks appear or extending it to the next annual is a violation.

66. B — A shimmy damper damps rapid side-to-side nose-gear oscillation. It does not lock the wheel straight or adjust tire pressure.

67. C — Using ordinary industrial oxygen is NOT correct; only aviator's breathing oxygen (low moisture) may be used to prevent freezing. Keeping oil away and opening valves slowly are correct practices.

68. C — A vacuum waste system saves water and weight by using cabin-to-outside pressure differential. It does not recirculate a large fluid volume or rely on gravity.

69. B — A split wheel's tire must be fully deflated before disassembly, because the inflated tire's force is restrained by the through-bolts. Disassembling inflated or removing the disc first is incorrect.

70. A — A properly formed shop head is about 0.5D tall by 1.5D wide. The reversed or 1D×1D proportions are incorrect.

71. C — Reducing engine RPM to rotor RPM is the transmission's job, NOT the swashplate's. The swashplate transmits collective (up/down) and cyclic (tilt) inputs.

72. A — A control cable with broken wires beyond limits is unairworthy and must be replaced. Lubrication or reversing the cable does not restore airworthiness.

73. B — Magnesium is flammable in finely divided form, and water can intensify a magnesium fire. It is neither safe to grind freely nor immune to corrosion.

74. C — A sequence valve ensures operations occur in the correct order. Over-pressure relief is the relief valve's job and switching to an emergency source is the shuttle valve's.

75. C — Applying marking values from memory or a similar aircraft is NOT correct; they must come from the specific aircraft's approved data. Green = normal and red line = limit are correct statements.

76. B — A popped clogging indicator means the element is clogged and bypassing, so it must be replaced. Resetting and continuing leaves the system on unfiltered fluid.

77. A — In differential aileron movement the up-aileron deflects farther to reduce adverse yaw. Equal deflection or neutral ailerons would not provide the benefit.

78. B — A "commutator valve" is not a hydraulic valve type; a commutator is an electrical device in a DC generator. Check and relief valves are real hydraulic valves.

79. B — A once-per-revolution vertical vibration indicates a blade out of track. A balance problem produces lateral vibration, and a tail rotor issue produces high-frequency symptoms.

80. A — Cabin altitude is the pressure altitude experienced by the occupants inside the cabin, lower than the aircraft's actual altitude. It does not equal flight altitude or mark the outflow valve's closure.

81. A — Eddy current or ultrasonic inspection is appropriate for a subsurface crack in aluminum. Magnetic particle won't work on aluminum, and visual won't find subsurface cracks.

82. C — Documenting a major repair with only a logbook note using acceptable data is NOT correct; major repairs require approved data and FAA Form 337. The other statements are true.

83. C — The IFR altimeter and static system inspection is required within the preceding 24 calendar months. It is not a 12- or 6-month requirement.

84. B — Carbon-fiber dust is electrically conductive and can short equipment. It does not improve cooling and is not harmless to electronics.

85. A — Three green gear lights indicate all gear is down and locked. In-transit or unsafe conditions are shown differently.

86. A — Supplying ram pressure to the airspeed indicator is NOT a static-system function; ram pressure comes from the pitot tube. The static system supplies ambient pressure to the altimeter and VSI.

87. B — Curing a composite with too little heat and pressure leaves an under-cured, weak laminate full of voids. Inadequate cure does not produce a resin-rich or stronger-than-original laminate.

88. A — The boost (auxiliary) pump provides pressure for starting, takeoff, altitude, and backup. It does not replace the engine-driven pump or cool the fuel.

89. A — An aircraft found not airworthy is handled by recording the inspection and providing a signed discrepancy list. The mechanic must never sign an airworthiness statement falsely or record nothing.

90. C — Delivering oxygen only on inhalation is NOT a continuous-flow characteristic; that describes diluter-demand. Continuous-flow delivers a steady flow and is common for passengers.

91. B — A priority valve directs fluid to the more critical system first. Relieving over-pressure and one-way flow are other valves' functions.

92. B — Bleed air is hot, high-pressure air tapped from the turbine compressor. It is not cool cabin air or ram air from the nose.

93. A — Calling an AD an optional manufacturer recommendation is incorrect; an AD is a mandatory FAA regulation, and an overdue applicable AD makes an aircraft unairworthy. So the "optional recommendation" statement is the false one.

94. B — Aircraft loads are wired in parallel so each device receives full voltage and operates independently. Series wiring shares current and causes cascade failure, which is the opposite of the goal.

95. B — The thermocouple triggers on a rapid rate-of-rise while the spot detector triggers at a set temperature. They do not both trigger at a fixed temperature or detect smoke.

96. C — Assuming dissimilar metals never corrode in contact is NOT a correct practice; they can corrode galvanically with an electrolyte present. Applying barriers and recognizing the risk are correct.

97. B — The main transmission reduces engine RPM to rotor RPM and multiplies torque. Disengaging the engine is the freewheeling unit's job and transmitting control inputs is the swashplate's.

98. B — The magnetic compass must be swung and have a current correction card after nearby ferrous work, because such work changes deviation. It is affected by nearby influences and is not removed for flights.

99. A — A check valve permits flow in one direction and blocks reverse flow. Relieving over-pressure and switching to an emergency source are other valves' functions.

100. A — The claim that the 100-hour may be performed only by an IA is NOT correct; it may be performed by an appropriately rated A&P. The 10-hour overfly-to-inspection allowance and the A&P authorization are correct statements.