

PRACTICE EXAM 8 (60 QUESTIONS)

1. For IFR operations, the altimeter system and static pressure system must have been tested and inspected within the preceding:

- A. 12 calendar months by any certificated mechanic
- B. 6 calendar months along with the transponder check
- C. 30 days before the planned IFR flight departs
- D. 24 calendar months by an appropriately certificated facility

2. A pilot experiences a sudden pressure change and ear block during a rapid descent. The most effective corrective technique is to:

- A. Climb back to altitude and remain there permanently
- B. Breathe rapidly to increase oxygen saturation levels
- C. Perform the Valsalva maneuver to equalize middle-ear pressure
- D. Descend faster to push through the pressure differential

3. Per regulation, the VOR equipment used for IFR must have been checked for accuracy within the preceding:

- A. 12 calendar months at an approved test station
- B. 24 calendar months during the pitot-static check
- C. 30 days prior to the IFR operation
- D. 90 days before any instrument approach is flown

4. Hypoxia caused by reduced oxygen partial pressure at altitude, with normal blood and circulation, is classified as:

- A. Hypoxic hypoxia from insufficient oxygen pressure
- B. Hypemic hypoxia from reduced blood oxygen capacity
- C. Stagnant hypoxia from inadequate blood circulation
- D. Histotoxic hypoxia from impaired cellular oxygen use

5. Required equipment for IFR flight under §91.205 that is NOT required for day VFR includes:

- A. A slip-skid indicator, sensitive altimeter, and clock with a sweep-second display
- B. An angle-of-attack indicator and a stall warning horn
- C. A radar altimeter and a terrain awareness warning system
- D. A weather radar display and a second attitude indicator

6. A pilot notices the onset of hyperventilation symptoms during a stressful IMC approach. The recommended corrective action is to:

- A. Increase the breathing rate to restore oxygen levels
- B. Slow the breathing rate and consciously control breathing
- C. Switch immediately to 100 percent supplemental oxygen
- D. Descend below 10,000 feet to relieve the symptoms

7. The maximum cabin pressure altitude at which the minimum required flight crew may operate without using supplemental oxygen for more than 30 minutes is:

- A. 10,000 feet MSL cabin pressure altitude
- B. 11,500 feet MSL cabin pressure altitude
- C. 12,500 feet MSL cabin pressure altitude
- D. 14,000 feet MSL cabin pressure altitude

8. On a low-altitude en route chart, a small open circle with a flag symbol along an airway typically denotes a:

- A. Restricted area requiring ATC clearance to enter
- B. Compulsory reporting point for non-radar position reports
- C. Military operations area active during daylight hours
- D. Visual checkpoint usable only under VFR conditions

9. The leans, a common form of vestibular spatial disorientation, typically result from:

- A. Rapid head movements during a coordinated level turn
- B. A slow roll into a bank that goes undetected by the inner ear
- C. Looking directly at bright approach lights at night
- D. A sudden forward acceleration on the takeoff roll

10. An aircraft's transponder must have been tested and inspected within the preceding ____ to be used in controlled airspace under IFR:

- A. 6 calendar months by the operator
- B. 12 calendar months by the pilot in command
- C. 30 days before each IFR flight
- D. 24 calendar months by an approved facility

11. Carbon monoxide poisoning in the cockpit, often from a cracked exhaust heat shroud, produces which classic early symptom?

- A. Headache, drowsiness, and impaired judgment
- B. Sharp chest pain and rapid involuntary blinking
- C. Sudden improvement in night vision acuity

D. Tingling limbs followed by euphoric alertness

12. A "VOR receiver check" using a designated VOT facility is within tolerance if the indicated bearing reads:

- A. 000° FROM or 180° TO, within plus or minus 10°
- B. The actual radial to the station within plus or minus 6°
- C. Any stable reading that does not fluctuate noticeably
- D. 0° FROM or 180° TO, within plus or minus 4 degrees

13. Effective scanning to avoid spatial disorientation on instruments relies on a technique known as the "selected radial scan" or:

- A. Staring continuously at the attitude indicator alone
- B. Rotating attention evenly to all six instruments equally
- C. Cross-checking with the attitude indicator as the hub
- D. Monitoring only the performance instruments in sequence

14. The required oxygen for flight crew applies "at all times" when the cabin pressure altitude exceeds:

- A. 10,000 feet MSL for the entire flight crew
- B. 12,500 feet MSL after the first 30 minutes only
- C. 13,000 feet MSL for passengers but not crew
- D. 14,000 feet MSL for the minimum required flight crew

15. A pilot's logbook must show, for IFR currency under §61.57(c), that within 6 calendar months the pilot completed six approaches plus holding and intercepting/tracking. If lapsed beyond the grace period, the pilot must:

- A. Simply wait until the next calendar month to regain currency

- B. File and fly any IFR flight to automatically reset currency
- C. Log three night landings to restore instrument privileges
- D. Complete an instrument proficiency check with an authorized person

16. Optical illusions on approach to a runway that is wider than usual tend to make the pilot perceive the aircraft as being:

- A. Higher than actual, prompting a steeper descent
- B. Lower than actual, prompting a shallower-than-normal approach
- C. Perfectly aligned with no illusion present
- D. Faster than actual groundspeed on short final

17. Under §91.171, if no VOR check facility is available, a pilot may perform a VOR check using a designated airborne checkpoint with a tolerance of:

- A. Plus or minus 4 degrees of the published radial
- B. Plus or minus 6 degrees of the published radial
- C. Plus or minus 10 degrees of the published radial
- D. Plus or minus 2 degrees of the published radial

18. The "graveyard spin" illusion may cause a pilot recovering from a spin to:

- A. Feel a sensation of spinning in the opposite direction
- B. Perceive a steep climb when actually descending
- C. Sense level flight while still fully inverted
- D. Feel a strong nose-down pitch with no rotation

19. A "circle-to-land" restriction "Circling NA west of RWY 9-27" means circling is:

- A. Required to be flown only on the west side of the field
- B. Permitted on all sides including west of the runway
- C. Authorized at reduced minimums on the west side
- D. Not authorized in the area west of the runway 9-27 line

20. Empty-field myopia, a hazard during high-altitude or hazy IMC-to-VMC transitions, causes the eyes to:

- A. Focus sharply on distant objects automatically
- B. Relax focus to a near point of roughly 10 to 30 feet
- C. Lose all peripheral vision capability temporarily
- D. Adapt instantly to bright sunlight after darkness

21. A pilot must hold at least a current first-, second-, or third-class medical certificate to exercise instrument privileges; for a private pilot exercising IFR privileges, the minimum is generally a:

- A. Third-class medical certificate or BasicMed where applicable
- B. First-class medical certificate renewed every six months
- C. Second-class medical certificate for all instrument flight
- D. Special issuance authorization regardless of class

22. The autokinesis illusion, which can occur while staring at a single light at night, causes the pilot to:

- A. Perceive a stationary light as moving erratically
- B. See multiple lights merge into one bright point
- C. Lose the ability to judge closure rate on traffic
- D. Experience temporary complete loss of color vision

23. A chart symbol showing an "x" within a circle on the approach planview most commonly identifies a:

- A. Prohibited area boundary within the terminal area
- B. Localizer transmitter antenna site location
- C. Compulsory holding fix for missed approaches
- D. Computer navigation fix or reporting waypoint

24. Pressure-demand oxygen systems differ from continuous-flow systems primarily in that they:

- A. Supply oxygen continuously regardless of breathing cycle
- B. Force oxygen into the lungs under positive pressure on demand
- C. Operate only below 18,000 feet cabin altitude
- D. Require no mask and use nasal cannula delivery only

25. A pilot tracking a localizer notices the needle is pegged and will not center despite corrections near the outer marker. The pilot should suspect:

- A. A normal indication when established on final approach
- B. A loss of localizer signal or being well outside course limits
- C. The glideslope has captured and overridden the localizer
- D. A required switch to the back-course mode is overdue

26. Spatial disorientation risk is highest during which phase of an IFR flight?

- A. Transitions between visual and instrument conditions
- B. Cruise flight at a constant altitude and heading
- C. Straight-and-level flight in clear daytime conditions
- D. While established in a stabilized standard-rate turn

27. The "Coriolis illusion," among the most dangerous, is produced when a pilot:

- A. Stares at a fixed light source for a prolonged period
- B. Accelerates rapidly in level flight on takeoff
- C. Looks at the wingtip during a steep level turn
- D. Moves the head sharply during a prolonged constant turn

28. A "T" symbol with an inverted triangle in the chart notes section directs the pilot to consult:

- A. The non-standard takeoff minimums and departure procedures
- B. The circling-approach minimums for that runway
- C. The missed approach holding instructions only
- D. The alternate airport weather minimums table

29. Required supplemental oxygen for passengers must be provided when the cabin pressure altitude exceeds 15,000 feet, and provided to the crew above 14,000 feet; between 12,500 and 14,000 feet, the crew must use oxygen after:

- A. The first 5 minutes at that cabin altitude
- B. Reaching 13,000 feet specifically
- C. 30 minutes at that cabin pressure altitude
- D. Continuously with no time allowance permitted

30. A "false horizon" illusion in IMC can occur when the pilot:

- A. Looks directly down at the instrument panel too long
- B. Stares at the attitude indicator without cross-checking
- C. Experiences vertigo from rapid pressure changes
- D. Mistakes a sloping cloud bank for the true horizon

31. For IFR flight, the aircraft must be equipped with navigation equipment "appropriate to the ground facilities to be used." This means a pilot filing a GPS-only route must ensure the:

- A. GPS is IFR-approved and operational for the intended route
- B. VOR receiver is also tuned to a backup frequency
- C. Aircraft carries a functioning ADF as a backup
- D. Route is flown only within radar coverage at all times

32. Scuba diving before flight is a concern because nitrogen absorbed under pressure can cause decompression sickness; after a dive requiring a controlled ascent, a pilot should wait at least:

- A. 4 hours before flying to any cabin altitude
- B. 12 hours before flying below 8,000 feet only
- C. 24 hours before flight to cabin altitudes above 8,000 feet
- D. 1 hour for every 10 feet of dive depth completed

33. A "DA" referenced on an LPV approach line differs from an MDA in that the DA:

- A. Is always 200 feet above the touchdown zone elevation
- B. Applies only to circling approaches at that airport
- C. Permits momentary descent below it during the go-around initiation
- D. Requires the pilot to level off and not descend further

34. The most reliable defense against all forms of spatial disorientation is to:

- A. Make frequent and deliberate head movements while flying
- B. Rely on bodily sensations to confirm the aircraft attitude
- C. Avoid looking at the instruments to prevent fixation
- D. Believe and fly the flight instruments rather than sensations

35. A pilot planning to fly an approach finds the airport's weather reporting is out of service (no current altimeter setting locally available). The pilot should:

- A. Fly the approach using the standard 29.92 setting
- B. Cancel the IFR flight plan and proceed under VFR
- C. Use an appropriate alternate altimeter source per the procedure notes
- D. Estimate the setting from the departure airport's value

36. The visual segment of an approach in flat, featureless terrain at night creates the "black hole approach" hazard, which most often results in:

- A. An approach flown lower and shorter than intended
- B. An approach flown higher and longer than intended
- C. Excessive crosswind correction on short final
- D. A premature flare well above the runway surface

37. A "feeder route" altitude printed on a chart between an en route fix and the IAF guarantees:

- A. Radar monitoring throughout the feeder segment
- B. Obstacle clearance and navigation signal along that route
- C. Separation from all other arriving IFR aircraft
- D. A continuous descent profile to the runway threshold

38. Alcohol consumption and flying: regulations prohibit acting as a crewmember within ____ of consuming alcohol or with a blood alcohol concentration of 0.04% or greater:

- A. 4 hours and a 0.08 percent limit
- B. 12 hours regardless of the amount consumed
- C. 24 hours after any alcoholic beverage

D. 8 hours ("bottle to throttle") at minimum

39. A localizer-type directional aid (LDA) differs from a standard localizer in that it:

- A. Always includes a precise electronic glideslope
- B. Is not aligned within 3 degrees of the runway centerline
- C. Provides identical course width at every airport
- D. Can only be used for circling approaches at night

40. Night vision relies heavily on the rods of the eye, which are concentrated away from the central fovea; therefore, to see a dim object at night a pilot should:

- A. Look directly at the object using central vision
- B. Use off-center viewing, looking slightly to the side
- C. Stare at the object continuously without blinking
- D. Rapidly shift the eyes back and forth across it

41. A pilot is told "expect the ILS RWY 4, descend and maintain 3,000, contact tower at the marker." The phrase "at the marker" refers to crossing the:

- A. Outer marker located near the final approach fix
- B. Inner marker just before the runway threshold
- C. Middle marker at the decision height point
- D. Back-course marker behind the runway

42. Decompression sickness symptoms ("the bends") most commonly first present as:

- A. Sudden improvement in visual acuity and focus
- B. Joint and muscle pain, often in the large joints

- C. A rapid increase in cabin pressure tolerance
- D. Enhanced cognitive performance at altitude

43. A chart depicting "MEA 7000" with a "T" and "GAP" notation along an airway indicates:

- A. A mandatory turn point at that location on the airway
- B. A temporary altitude restriction lifted seasonally
- C. A change-over point or a navigation signal gap exists
- D. The terminal arrival altitude for that route segment

44. Disorientation from the somatogravic illusion during a missed approach (rapid acceleration) typically creates a false sensation of:

- A. A descending left turn requiring right rudder
- B. A nose-low attitude prompting a pitch-up
- C. A nose-up (pitch-up) attitude, tempting a pitch-down
- D. Rolling rapidly to the right requiring left aileron

45. A pilot must report to ATC without being requested when, among other items, experiencing a loss of navigation capability, leaving an assigned altitude, or:

- A. Changing the aircraft's true airspeed by 5 knots
- B. Passing each compulsory reporting point under radar
- C. Switching from one navigation radio to another
- D. A change in average true airspeed of 5 percent or 10 knots

46. The required clock for IFR flight under §91.205 must display:

- A. Hours, minutes, and seconds with a sweep-second or digital presentation

- B. Only the current local time in 12-hour format
- C. Elapsed time since engine start automatically
- D. Coordinated universal time exclusively at all times

47. A pilot suffering from "fixation" or channelized attention during a high-workload approach is at risk because:

- A. Focusing on one instrument or task degrades the overall scan
- B. The autopilot will automatically disconnect under load
- C. Peripheral vision improves and causes overcorrection
- D. The attitude indicator becomes unreliable under stress

48. A "VOR/DME" or "TACAN" approach where the final approach course is offset from the runway centerline requires the pilot to:

- A. Treat the approach as a precision approach with a glideslope
- B. Descend straight in to the runway regardless of the offset
- C. Use the offset course as the runway alignment guidance
- D. Maneuver to align with the runway after acquiring the environment

49. Pilots over 40 commonly experience presbyopia, which in the cockpit manifests as:

- A. Loss of peripheral vision during night approaches
- B. Difficulty focusing on near objects like charts and instruments
- C. Complete inability to distinguish colors on displays
- D. Heightened sensitivity to glare from cockpit lighting only

50. A SID with the note "RADAR REQUIRED" means the procedure:

- A. May be flown by any aircraft with an operating transponder
- B. Requires only that the pilot report passing each fix
- C. Can only be flown when ATC can provide radar monitoring or vectors
- D. Is reserved exclusively for aircraft equipped with weather radar

51. A pilot flying at 16,000 feet cabin pressure altitude in an unpressurized aircraft must, by regulation, ensure that:

- A. Passengers are offered oxygen but crew need not use it
- B. Oxygen is used only if the flight exceeds one hour
- C. No oxygen requirement applies below 18,000 feet
- D. The required flight crew is using supplemental oxygen continuously

52. A "step-down fix" on a non-precision approach exists to:

- A. Mark the missed approach point for the procedure
- B. Identify the visual descent point on the final segment
- C. Allow a lower minimum altitude after passing an obstacle
- D. Establish the holding pattern entry at the final fix

53. The illusion that a wider-than-normal runway induces is dangerous primarily because the resulting low approach can lead to:

- A. Striking obstacles or terrain short of the runway
- B. An excessively high flare causing a hard touchdown
- C. Overshooting the runway and a go-around
- D. A perfectly normal approach with no added risk

54. Under §91.167, IFR fuel requirements demand enough fuel to fly to the destination, then to the alternate (if required), and after that to fly for:

- A. 30 minutes at normal cruising speed during the day
- B. 60 minutes at maximum continuous power setting
- C. 45 minutes at normal cruising speed
- D. 15 minutes beyond the alternate airport only

55. A "DME required" notation on an approach chart means the pilot:

- A. May substitute timing from the FAF in all cases
- B. Must have operable DME (or suitable RNAV substitute) to fly it
- C. Can fly the approach using VOR radials alone
- D. Needs DME only for the missed approach segment

56. Pressurization failure at high altitude poses the threat of hypoxia with a short "time of useful consciousness." At 25,000 feet, the time of useful consciousness is approximately:

- A. 30 minutes or more for an acclimated pilot
- B. 10 to 15 minutes with no physical exertion
- C. 5 to 6 minutes on average for most pilots
- D. 3 to 5 minutes for the average individual

57. A localizer back-course approach where the airport also has an ILS on the reciprocal runway requires the pilot to be alert for:

- A. Automatic glideslope guidance on the back course
- B. Identical needle sensing to the front-course approach
- C. Reverse sensing unless the avionics provide a correction

D. A stronger localizer signal on the back-course side

58. A pilot encountering an "inversion illusion" (a sensation of tumbling backward) most likely just experienced:

- A. A rapid descent into denser air near the surface
- B. A prolonged turn followed by abrupt head movement
- C. An abrupt change from climb to straight-and-level flight
- D. A sudden deceleration during the landing rollout

59. A chart's "MSA" sector altitude of 4,800 feet within a 25 NM ring provides:

- A. Navigation signal coverage guarantee in that sector
- B. 1,000 feet of obstacle clearance in that sector
- C. Radar vectoring altitude assigned by the controller
- D. Separation from other IFR traffic in the sector

60. A pilot who has donated blood recently should be cautious about flying because:

- A. Reduced blood volume increases susceptibility to hypoxia
- B. Blood donation improves altitude tolerance temporarily
- C. The donation has no physiological effect on flight safety
- D. Increased red cell count enhances oxygen-carrying capacity

+ Answer Key

1. D — The altimeter and static pressure system must be tested and inspected within the preceding 24 calendar months by an appropriately certificated facility under §91.411. This biennial check ensures altitude indications are accurate for IFR. An out-of-date check makes the aircraft ineligible for IFR flight in controlled airspace.

2. C — The Valsalva maneuver — closing the mouth, pinching the nose, and gently blowing — opens the Eustachian tubes to equalize middle-ear pressure during descent. Pressure trapped behind a blocked tube causes pain and hearing loss. Equalizing relieves the ear block safely.

3. C — Under §91.171, VOR equipment used for IFR must have been checked for accuracy within the preceding 30 days. The check confirms the receiver is within tolerance for navigation. An expired VOR check prohibits using that equipment for IFR.

4. A — Hypoxic hypoxia results from a reduced partial pressure of oxygen at altitude despite normal blood and circulation. Thinner air provides less oxygen pressure to load the blood. It is the form most directly tied to increasing altitude.

5. A — Beyond day-VFR gear, §91.205 IFR requires a slip-skid indicator, a sensitive altimeter adjustable for barometric pressure, and a clock displaying hours, minutes, and seconds. These support instrument control, accurate altitude, and timing. The mnemonic "GRABCARD" captures the full IFR equipment list.

6. B — Hyperventilation is corrected by slowing the breathing rate and consciously controlling breathing to restore the carbon dioxide balance. Over-breathing depletes CO₂ and causes the symptoms. Calm, slow breaths (or talking aloud) reverse the condition.

7. C — Under §91.211, the required minimum flight crew may operate at cabin pressure altitudes up to 12,500 feet without supplemental oxygen, but must use it for any portion above that lasting more than 30 minutes. This threshold protects against the onset of hypoxia. Above 14,000 feet oxygen is required at all times.

8. B — A solid triangle (or flagged circle) on an en route chart marks a compulsory reporting point where position reports are required in a non-radar environment. These points keep ATC informed without radar. Open triangles, by contrast, are on-request reporting points.

9. B — The leans arise when a slow, sub-threshold roll into a bank goes undetected by the inner ear, so the pilot perceives wings-level while actually banked. Upon correcting, the pilot feels banked the opposite way. Trusting the attitude indicator resolves the illusion.

10. D — Under §91.413, the ATC transponder must be tested and inspected within the preceding 24 calendar months by an approved facility. This ensures accurate altitude reporting and replies. An overdue transponder check disqualifies its use in controlled airspace.

11. A — Early carbon monoxide poisoning produces headache, drowsiness, and impaired judgment as CO binds hemoglobin and starves tissues of oxygen. A cracked exhaust shroud can leak CO into cabin heat. Recognizing the symptoms and shutting off cabin heat is the immediate response.

12. D — A VOT check is within tolerance when the indication reads 0° FROM or 180° TO, within plus or minus 4 degrees. The VOT transmits a fixed omnidirectional signal for this purpose. A reading outside $\pm 4^\circ$ means the receiver is out of tolerance for IFR.

13. C — The recommended instrument scan uses the attitude indicator as the central hub, radiating attention out to the other instruments and back. The attitude indicator integrates pitch and bank in one display. This control-instrument-centered scan minimizes fixation and disorientation.

14. D — Above 14,000 feet cabin pressure altitude, the minimum required flight crew must use supplemental oxygen at all times under §91.211. There is no time allowance at this altitude. The requirement reflects the rapid onset of hypoxia at higher altitudes.

15. D — If IFR currency lapses beyond the six-month currency window and the following six-month grace period, the pilot must complete an instrument proficiency check with an authorized person. The IPC re-establishes proficiency under evaluation. Merely flying or logging night landings does not restore instrument currency.

16. B — A wider-than-usual runway makes the pilot feel lower than actual, prompting a shallow approach and a tendency to flare high or fly a flatter path. The unusually wide picture mimics being close to the ground. Awareness and instrument cross-check counter the illusion.

17. B — Under §91.171, an airborne VOR checkpoint allows a tolerance of plus or minus 6 degrees of the published radial. The airborne check is less precise than ground checks, hence the wider tolerance. Exceeding $\pm 6^\circ$ means the equipment is unusable for IFR.

18. A — Recovering from a prolonged spin can produce the graveyard spin illusion, a false sensation of spinning in the opposite direction. The inner ear adapts to the original rotation, then signals reverse motion on recovery. The pilot may wrongly reapply pro-spin inputs unless trusting the instruments.

19. D — "Circling NA west of RWY 9-27" means circling is not authorized in the area west of that runway line, typically due to obstacles or terrain. The restriction confines circling to permitted sectors. Circling into the prohibited area forfeits obstacle protection.

20. B — Empty-field myopia occurs when there is nothing to focus on, so the eyes relax to a near focus of roughly 10 to 30 feet, reducing the ability to detect distant traffic or terrain. It is common in haze or featureless skies. Deliberately focusing on a distant object counters it.

21. A — A private pilot exercising IFR privileges generally needs at least a current third-class medical certificate, or may operate under BasicMed where its conditions and limitations apply. The medical confirms fitness to fly. The class required scales with the operation being conducted.

22. A — Autokinesis makes a single stationary light at night appear to move erratically when stared at for several seconds. The brain misinterprets the fixed point in the absence of references. Scanning rather than staring prevents reacting to the false motion.

23. D — An "x" within a circle on the planview commonly marks a computer navigation fix or reporting waypoint used in RNAV procedures. It identifies a named point for the flight management system or position reporting. Recognizing the symbol aids waypoint awareness.

24. B — Pressure-demand systems force oxygen into the lungs under positive pressure during each demand cycle, enabling operation at higher altitudes than continuous-flow systems. The positive pressure overcomes the reduced ambient pressure. This is why they are used at extreme altitudes.

25. B — A localizer needle pegged and uncenterable despite corrections suggests loss of signal or being well outside the course limits. The CDI saturates beyond full-scale deflection. The pilot should verify frequency, identification, and position rather than chase a dead needle.

26. A — Spatial disorientation risk peaks during transitions between visual and instrument conditions, when the brain must switch references abruptly. Entering or exiting clouds removes or restores the outside horizon. Disciplined instrument reliance bridges these high-risk moments.

27. D — The Coriolis illusion occurs when a pilot moves the head sharply during a prolonged constant turn, stimulating multiple semicircular canals and producing a powerful tumbling sensation. It is among the most disorienting illusions. Avoiding abrupt head movements in turns prevents it.

28. A — The "T" in an inverted triangle directs the pilot to the non-standard takeoff minimums and (obstacle) departure procedures section of the chart. It signals that default minimums do not apply. Checking the referenced notes is required before departure.

29. C — Between 12,500 and 14,000 feet cabin pressure altitude, the required flight crew must use supplemental oxygen after 30 minutes at that altitude under §91.211. The 30-minute allowance reflects tolerable mild hypoxia exposure. Beyond 14,000 feet, oxygen is required continuously.

30. D — A false horizon illusion arises when the pilot mistakes a sloping cloud bank, terrain, or light line for the true horizon and aligns the aircraft with it. The result is an unintended bank or pitch. Cross-checking the attitude indicator reveals the true horizon.

31. A — For a GPS-only route, the pilot must ensure the GPS is IFR-approved and operational for the intended route, satisfying the "equipment appropriate to the facilities" requirement. The unit must meet TSO and database currency standards. Non-approved or inoperative GPS cannot be the sole IFR navigation source.

32. C — After a dive requiring a controlled ascent, a pilot should wait at least 24 hours before flying to cabin altitudes above 8,000 feet, to allow residual nitrogen to dissipate. Flying too soon risks decompression sickness as ambient pressure drops. The wait reduces the bends hazard.

33. D — A Decision Altitude on an LPV requires that descent stop at the DA if visual references are absent — the pilot does not level off and continue, but initiates a go-around. Unlike an MDA, descent below DA momentarily occurs during the go-around but is not a level-off altitude. The DA is a precision-style go/no-go point.

34. D — The most reliable defense against spatial disorientation is to believe and fly the flight instruments rather than physical sensations. Bodily cues are unreliable without an outside horizon. Trained instrument cross-check overrides the misleading vestibular signals.

35. C — When local altimeter reporting is out of service, the pilot uses the appropriate alternate altimeter source specified in the procedure notes, which often raises the minimums. The chart designates an acceptable nearby source. Using the standard 29.92 or a guessed value would not provide accurate altitude.

36. B — The black hole approach over featureless dark terrain typically causes the pilot to fly higher and longer, perceiving the aircraft as low when it is on or above path. Without peripheral cues, the runway picture is misjudged. Cross-checking the glidepath and instruments corrects it.

37. B — A feeder route altitude guarantees obstacle clearance and acceptable navigation signal along the path from the en route fix to the initial approach fix. It bridges the structure to the approach safely. It does not guarantee radar monitoring or traffic separation by itself.

38. D — Regulations prohibit acting as a crewmember within 8 hours of consuming alcohol ("bottle to throttle") or with a blood alcohol concentration of 0.04% or greater. The rule also bars flying while under the influence. The 8-hour figure is a minimum, not a guarantee of fitness.

39. B — An LDA has a localizer-type signal but is not aligned within 3 degrees of the runway centerline, distinguishing it from a standard localizer. The offset means it may require maneuvering to land. Some LDAs include a glideslope, but the defining trait is the alignment offset.

40. B — Because rods responsible for night vision lie away from the central fovea, off-center viewing — looking slightly to the side — better detects dim objects at night. Looking directly places the image on the rod-poor fovea. Scanning with off-center technique improves night detection.

41. A — "Contact tower at the marker" refers to crossing the outer marker, located near the final approach fix on the ILS. The outer marker signals the start of the final descent on a precision approach. It is the customary handoff point to the tower.

42. B — Decompression sickness commonly first presents as joint and muscle pain, especially in the large joints — the classic "bends." Nitrogen bubbles forming in tissues cause the pain. Descending and seeking medical care are the appropriate responses.

43. C — A "T" or "GAP" notation along an airway indicates a change-over point or a gap in navigation signal coverage on that segment. It tells the pilot where to switch navaids or expect no usable signal. Recognizing it supports continuous navigation planning.

44. C — The somatogravic illusion during rapid acceleration (as in a missed approach) creates a false nose-up sensation, tempting the pilot to push the nose down dangerously. Forward acceleration tilts the otolith organs like a pitch-up. Trusting the attitude indicator prevents a descent into terrain.

45. D — Pilots must report without request a change in average true airspeed of 5 percent or 10 knots (whichever is greater) from that filed, among other items like leaving an altitude or losing navigation capability. These reports keep ATC's flight progress accurate. Knowing the mandatory reports prevents missed notifications.

46. A — The required IFR clock under §91.205 must display hours, minutes, and seconds, via a sweep-second hand or digital presentation. Accurate timing supports timed approaches and holding. A clock lacking seconds does not meet the requirement.

47. A — Channelized attention (fixation) on a single instrument or task degrades the overall instrument scan, allowing other parameters to drift unnoticed. High workload narrows attention. Deliberately maintaining the full cross-check guards against it.

48. D — When the final approach course is offset from the runway centerline, the pilot must maneuver to align with the runway after acquiring the runway environment. The offset course does not lead straight to touchdown. Recognizing the offset prevents landing misalignment.

49. B — Presbyopia, common after age 40, reduces the eye's ability to focus on near objects such as charts and instruments. The lens loses flexibility with age. Corrective lenses restore near focus in the cockpit.

50. C — "RADAR REQUIRED" on a SID means the procedure can only be flown when ATC can provide radar monitoring or vectors, because some segments lack pilot-navigable guidance. Without radar service the procedure is unavailable. The note ensures the necessary ATC support exists.

51. D — At 16,000 feet cabin pressure altitude in an unpressurized aircraft, the required flight crew must use supplemental oxygen continuously, since it exceeds 14,000 feet. Above 14,000 feet there is no time allowance for the crew. Continuous oxygen prevents hypoxia at this altitude.

52. C — A step-down fix allows descent to a lower minimum altitude once the aircraft has passed an obstacle protected by the higher prior altitude. It refines the descent profile on a non-precision approach. Descending early, before the fix, forfeits the obstacle clearance.

53. A — The wide-runway illusion produces a low approach, and the danger is striking obstacles or terrain short of the runway. Perceiving the aircraft as high tempts an excessively shallow or low path. Cross-checking the glidepath prevents the undershoot.

54. C — Under §91.167, IFR fuel must cover the destination, then the alternate if required, plus 45 minutes at normal cruising speed. This reserve protects against delays and diversions. Planning less fuel violates the IFR reserve requirement.

55. B — A "DME required" note means the pilot must have operable DME, or an approved RNAV substitute, to fly the approach as published. Some fixes or arcs cannot be identified without it. Lacking DME (or a substitute) makes the procedure unavailable.

56. D — At 25,000 feet, the time of useful consciousness is approximately 3 to 5 minutes for the average individual. Rapid decompression can shorten it further. Knowing the TUC underscores the urgency of donning oxygen after a pressurization failure.

57. C — A back-course approach with an ILS on the reciprocal runway requires alertness for reverse sensing unless the avionics (such as a back-course mode or HSI) correct it. The CDI deflects opposite the needed correction on the back course. Misreading sensing can steer the aircraft off course.

58. C — The inversion illusion, a sensation of tumbling backward, typically follows an abrupt change from a climb to straight-and-level flight. The sudden pitch change overstimulates the otolith organs. Trusting the attitude indicator prevents pushing the nose down in response.

59. B — An MSA sector altitude provides 1,000 feet of obstacle clearance within the depicted 25 NM ring for that sector. It is an emergency reference, not a guarantee of navigation signal or radar service. Pilots use it for terrain awareness off the procedure.

60. A — Recent blood donation reduces blood volume and oxygen-carrying capacity, increasing susceptibility to hypoxia at altitude. The body needs time to replenish. Pilots should allow recovery before flying, especially at higher cabin altitudes.