

PRACTICE EXAM 9 SIMULATION

1. An aircraft tracking inbound on the 090° radial of a VOR shows the CDI deflected two dots to the left with a TO indication. Where is the aircraft relative to the desired course?
 - A. The aircraft is right of course and must turn left to correct
 - B. The aircraft is left of course and must turn right to correct
 - C. The aircraft is on course but flying away from the station
 - D. The aircraft has crossed the station and reversed sensing

2. A WAAS-capable GPS receiver enables which type of approach not available with a basic IFR GPS unit?
 - A. A localizer back course approach with vertical guidance
 - B. A circling approach to lower than standard minimums
 - C. An LPV approach with vertical guidance to lower minimums
 - D. A precision radar approach controlled by ground equipment

3. A pilot must compute the descent rate to maintain a 3° glidepath at a groundspeed of 140 knots. The required rate of descent is approximately what value?
 - A. About 450 feet per minute on the descent
 - B. About 740 feet per minute on the descent
 - C. About 1,050 feet per minute on the descent
 - D. About 1,400 feet per minute on the descent

4. During an RNAV (GPS) approach, the receiver annunciates "RAIM not available" approaching the final approach fix. What is the appropriate pilot action?

- A. Continue the approach using the last valid GPS position
- B. Discontinue the approach and execute the missed approach procedure
- C. Switch the receiver to terminal mode and proceed inbound
- D. Reduce speed and continue to the runway threshold visually

5. The angle between true north and magnetic north at a given location is known by what term?

- A. Magnetic deviation caused by aircraft electrical fields
- B. Compass acceleration error on east-west headings
- C. Isogonic variation shown on aeronautical charts
- D. Magnetic variation between true and magnetic north

6. A pilot flying at 6,000 feet with an outside air temperature significantly colder than standard should expect what regarding indicated altitude?

- A. The altimeter overreads; true altitude is higher than indicated
- B. The altimeter reads correctly because temperature has no effect
- C. The altimeter overreads; true altitude is lower than indicated
- D. The altimeter underreads; true altitude is much higher than shown

7. When ATC assigns a hold "as published" at a fix depicted on the approach chart, what governs the holding pattern parameters?

- A. The pilot selects any standard right-turn pattern at the fix
- B. The controller verbally states all pattern parameters each time
- C. The charted holding pattern depiction defines the parameters
- D. The aircraft's RNAV database selects a default left-turn pattern

8. Hypoxia resulting from reduced atmospheric pressure at altitude, decreasing oxygen partial pressure, is classified as which type?

- A. Histotoxic hypoxia from cellular oxygen-use impairment
- B. Stagnant hypoxia from inadequate blood circulation
- C. Hypemic hypoxia from reduced blood oxygen-carrying capacity
- D. Hypoxic hypoxia from reduced ambient oxygen partial pressure

9. A pilot is cleared for an ILS approach but the autopilot fails to capture the glideslope. What is the most likely reason if the localizer was captured normally?

- A. The localizer frequency was incorrectly tuned in the receiver
- B. The aircraft was below the glideslope at the intercept point
- C. The CDI source was set to GPS rather than the VLOC mode
- D. The aircraft intercepted from above, outside glideslope capture

10. The required obstacle clearance provided by a standard instrument approach in the final approach segment of a non-precision approach is what minimum value?

- A. 1,000 feet of clearance above the controlling obstacle
- B. 250 feet of required obstacle clearance in the final segment
- C. 500 feet of clearance in the final approach segment
- D. 100 feet of clearance over the missed approach surface

11. A turn coordinator differs from a turn-and-slip indicator in that the turn coordinator's gyro is canted to also sense which motion?

- A. Roll rate in addition to yaw rate during a turn entry
- B. Pitch rate during climbs and descents simultaneously
- C. Vertical acceleration during level standard rate turns

D. Heading change rate independent of bank angle changes

12. Under IFR in Class A airspace, what is the required pilot certification and equipment beyond a standard instrument rating?

A. A commercial pilot certificate is mandatory in Class A

B. A type rating for the specific airframe being operated

C. A transponder with Mode C only, no other requirement

D. An operable transponder with altitude reporting and ADS-B Out

13. A pilot computes that with a 30-knot headwind component, an approach groundspeed of 90 knots requires what indicated airspeed if the true airspeed equals indicated at the approach altitude?

A. An indicated airspeed of 60 knots into the headwind

B. An indicated airspeed of 120 knots into the headwind

C. An indicated airspeed of 90 knots regardless of wind

D. An indicated airspeed of 150 knots into the headwind

14. The "fix" depicted by a DME distance and a VOR radial on an enroute chart is best described as which type of intersection?

A. A waypoint requiring two separate VOR cross-radials

B. A fix defined by a radial and a DME slant-range distance

C. A reporting point defined by two airway centerlines crossing

D. A GPS-only waypoint stored in the navigation database

15. A pilot experiences the "leans" after a prolonged coordinated turn. This illusion results from what physiological cause?

A. Pooling of fluid in the inner ear's cochlear structures

- B. Overstimulation of the visual system in dark conditions
- C. The semicircular canals failing to detect a slow return to level
- D. Pressure changes affecting the otolith organs during climb

16. When the GPS receiver indicates it is in "terminal mode," the CDI full-scale sensitivity has changed to what value?

- A. Full scale of 5.0 nautical miles in the enroute phase
- B. Full scale of 2.0 nautical miles for the terminal area
- C. Full scale of 0.3 nautical miles on the final approach
- D. Full scale of 1.0 nautical mile within the terminal area

17. A pilot must determine the magnetic heading to fly given a true course of 175° , variation of 8° east, and no wind. What is the magnetic heading?

- A. A magnetic heading of 183 degrees must be flown
- B. A magnetic heading of 175 degrees must be flown
- C. A magnetic heading of 191 degrees must be flown
- D. A magnetic heading of 167 degrees must be flown

18. The minimum visibility for takeoff under Part 91 for a non-commercial operation at a tower-controlled airport is governed by what rule?

- A. Part 91 specifies no minimum takeoff visibility for non-commercial flights
- B. A minimum of one statute mile visibility is always required
- C. The published instrument approach minimums apply to takeoff
- D. The standard 600 feet RVR applies to all Part 91 departures

19. An aircraft on a DME arc must increase its distance from the station. To do so, the pilot should adjust the bearing pointer to which position relative to the wingtip?

- A. Keep the bearing pointer exactly on the wingtip reference
- B. Position the bearing pointer behind the wingtip reference
- C. Position the bearing pointer ahead of the wingtip reference
- D. Center the bearing pointer on the nose of the aircraft

20. A pilot reviewing an approach plate sees "VDP 1.5 NM." This visual descent point indicates what?

- A. The point on a non-precision final from which a normal descent to landing begins
- B. The point where the missed approach climb gradient steepens
- C. The maximum distance the procedure turn may extend outbound
- D. The point at which the glideslope intercepts the final approach fix

21. The relationship between true airspeed and indicated airspeed as altitude increases at a constant indicated value is best described how?

- A. True airspeed increases above indicated as altitude increases
- B. True airspeed decreases below indicated as altitude increases
- C. True airspeed remains equal to indicated at all altitudes
- D. True airspeed equals indicated only above the tropopause

22. A pilot loses two-way radio communication in IMC. For route, the pilot should fly which of the following in order of priority?

- A. The last assigned altitude until reaching the destination fix
- B. Direct to the nearest VFR airport for an immediate landing
- C. Assigned route, then vectored route, then expected, then filed
- D. The minimum enroute altitude for the highest segment flown

23. The decision altitude (DA) on an ILS approach differs from an MDA in what fundamental way?

- A. The DA is always lower than any published MDA value
- B. The DA applies only to circling approaches at the airport
- C. The DA requires the pilot to level off and search for the runway
- D. The DA is a point on the glidepath where the missed decision is made

24. A pilot computing pressure altitude with a field elevation of 1,200 feet and an altimeter setting of 29.42 inches Hg should expect pressure altitude to be approximately what?

- A. Pressure altitude is lower than field elevation by 480 feet
- B. Pressure altitude equals field elevation since setting is standard
- C. Pressure altitude is 1,200 feet equal to the field elevation
- D. Pressure altitude is about 1,680 feet, higher than field elevation

25. The IFR alternate airport weather minimums for an airport with a precision approach require what forecast ceiling and visibility?

- A. A ceiling of 600 feet and visibility of 2 statute miles
- B. A ceiling of 800 feet and visibility of 2 statute miles
- C. A ceiling of 1,000 feet and visibility of 3 statute miles
- D. A ceiling of 400 feet and visibility of 1 statute mile

26. A pilot encounters an autopilot runaway pitch trim in IMC. What is the immediate priority action?

- A. Reduce engine power to slow the pitch excursion first
- B. Switch the GPS to terminal mode to stabilize guidance
- C. Request a higher altitude from ATC before troubleshooting
- D. Disconnect the autopilot and control the aircraft manually

27. On an HSI, the course deviation bar and the heading reference are combined. What advantage does this provide over a conventional CDI?

- A. It eliminates the need for a separate altimeter reference
- B. It provides automatic glideslope capture without pilot input
- C. It presents course and aircraft heading on a single display
- D. It removes the requirement for a directional gyro entirely

28. A pilot must intercept and track a magnetic bearing of 045° TO an NDB with a relative bearing of 030° . What is the aircraft's current magnetic heading?

- A. The magnetic heading is 015 degrees at this moment
- B. The magnetic heading is 075 degrees at this moment
- C. The magnetic heading is 045 degrees at this moment
- D. The magnetic heading is 030 degrees at this moment

29. The phenomenon where a pilot perceives a false climb sensation during a rapid acceleration on takeoff into IMC is called what?

- A. The false horizon illusion from sloping cloud decks
- B. The graveyard spiral from an undetected banking turn
- C. The somatogravic illusion from forward linear acceleration
- D. The autokinesis illusion from a fixed point of light

30. A pilot flying a coupled ILS approach notices the flight director commands a continuous pitch-up while airspeed decays. What is the most appropriate response?

- A. Increase back pressure to follow the flight director command
- B. Disconnect the autopilot and flight director, then fly raw data
- C. Reduce power to allow the flight director to recapture path

D. Switch the navigation source to GPS and re-engage approach mode

31. The required navigation performance (RNP) value associated with a standard RNAV approach final segment is typically what?

- A. An RNP value of 1.0 nautical mile in the final segment
- B. An RNP value of 0.3 nautical mile in the final approach segment
- C. An RNP value of 2.0 nautical miles in the final segment
- D. An RNP value of 0.1 nautical mile required on all approaches

32. A pilot computing time to a station using the bearing-change method turns 90° to the bearing and times 2 minutes for a 10° bearing change. What is the approximate time to the station?

- A. The time to the station is approximately 6 minutes
- B. The time to the station is approximately 20 minutes
- C. The time to the station is approximately 9 minutes
- D. The time to the station is approximately 12 minutes

33. Which document or source provides the legally binding minimum altitudes, routes, and procedures for an instrument approach?

- A. The Aeronautical Information Manual guidance section
- B. The aircraft flight manual supplement for avionics
- C. The published instrument approach procedure chart
- D. The enroute low-altitude chart airway listings only

34. A pilot in a holding pattern at 9,000 feet MSL must not exceed what maximum holding airspeed?

- A. A maximum holding speed of 175 knots indicated airspeed

- B. A maximum holding speed of 200 knots indicated airspeed
- C. A maximum holding speed of 230 knots indicated airspeed
- D. A maximum holding speed of 265 knots indicated airspeed

35. The "circle of error" or position uncertainty in a GPS solution is most directly reduced by which factor?

- A. Increasing the aircraft's altitude above the terrain
- B. Favorable satellite geometry with a low dilution of precision
- C. Reducing the aircraft's groundspeed during the approach
- D. Selecting the terminal mode on the GPS receiver manually

36. A pilot must determine wind correction angle given a true airspeed of 120 knots and a 90° crosswind component of 20 knots. The approximate wind correction angle is what?

- A. A wind correction angle of about 5 degrees is required
- B. A wind correction angle of about 25 degrees is required
- C. A wind correction angle of about 10 degrees is required
- D. A wind correction angle of about 30 degrees is required

37. When an ILS approach chart lists "GS 3.00°" and "TCH 50," the TCH value refers to what?

- A. The total course heading to be flown on the final segment
- B. The terminal clearance height for the missed approach climb
- C. The threshold crossing height of the glidepath above the runway
- D. The transition control altitude where handoff occurs

38. A pilot experiences pitot tube icing without pitot heat in IMC. Which instruments are affected and how should the pilot respond?

- A. Only the altimeter freezes; ignore it and use the VSI for descent
- B. The airspeed indicator becomes unreliable; use power and pitch settings
- C. All gyroscopic instruments tumble; revert to the magnetic compass
- D. The VSI lags badly; increase the scan rate of all instruments

39. Under Part 91, an instrument approach may be commenced when the reported visibility is below minimums in which circumstance?

- A. Only when the destination has an operating control tower present
- B. When conducted under Part 91, the approach may be started regardless of reported visibility
- C. Only when the alternate airport is reporting above minimums
- D. Only when the pilot holds an ATP certificate and a type rating

40. A pilot computing the top-of-descent point for a 3° path from 10,000 feet to a sea-level airport, with 3,000 feet to lose to a restriction, should begin descent approximately how far out for that segment?

- A. Approximately 10 nautical miles before the restriction point
- B. Approximately 3 nautical miles before the restriction point
- C. Approximately 30 nautical miles before the restriction point
- D. Approximately 6 nautical miles before the restriction point

41. The standard procedure turn must be completed within what distance unless otherwise specified on the approach chart?

- A. Within 5 nautical miles of the procedure turn fix
- B. Within 15 nautical miles of the procedure turn fix
- C. Within 20 nautical miles of the procedure turn fix
- D. Within 10 nautical miles of the procedure turn fix

42. A pilot notices the magnetic compass leads the turn when turning through south in the Northern Hemisphere. This behavior is consistent with which compass error?

- A. Northerly turning error causing the compass to lead near south
- B. Acceleration error producing a false turn indication on east
- C. Deviation error from nearby ferrous metal in the cockpit
- D. Oscillation error from turbulence affecting the compass card

43. A pilot must compute fuel required for a flight leg of 2.5 hours at a burn rate of 11 gallons per hour, plus IFR reserves. What total fuel quantity is needed if reserve is 45 minutes?

- A. About 36 gallons including the 45-minute reserve allowance
- B. About 27 gallons including the 45-minute reserve allowance
- C. About 50 gallons including the 45-minute reserve allowance
- D. About 22 gallons including the 45-minute reserve allowance

44. The instrument approach category of an aircraft is determined by which performance value?

- A. The maximum gross takeoff weight of the aircraft type
- B. The stall speed in the clean configuration at gross weight
- C. The published cruise speed at the certified service ceiling
- D. 1.3 times the stall speed in the landing configuration at max weight

45. A pilot flying an LNAV/VNAV approach uses what source for the vertical guidance compared to an LPV approach?

- A. Both LNAV/VNAV and LPV use the same SBAS angular guidance
- B. LNAV/VNAV uses barometric VNAV; LPV uses SBAS angular guidance
- C. LNAV/VNAV uses the ground-based glideslope transmitter signal

D. LPV uses barometric altitude while LNAV/VNAV uses radar altimeter

46. A pilot must convert a true course of 250° with 12° west variation and 3° east deviation to a compass heading. The compass heading is what value?

A. A compass heading of 259 degrees should be flown

B. A compass heading of 241 degrees should be flown

C. A compass heading of 265 degrees should be flown

D. A compass heading of 235 degrees should be flown

47. When ATC states "maintain maximum forward speed," and later "reduce to approach speed," the second instruction primarily serves what purpose?

A. To allow sequencing and spacing with other arriving traffic

B. To reduce the aircraft's fuel consumption during the descent

C. To comply with the Class B airspace speed restriction limit

D. To prevent exceeding the maximum holding pattern airspeed

48. The required climb gradient for a standard missed approach, when not otherwise published, is what value?

A. A climb gradient of 152 feet per nautical mile is standard

B. A climb gradient of 500 feet per nautical mile is required

C. A climb gradient of 100 feet per nautical mile is standard

D. A climb gradient of 200 feet per nautical mile is standard

49. A pilot computing the 60-to-1 rule finds that a 1° change in glidepath at 6 nautical miles equals approximately what altitude change?

A. An altitude change of approximately 60 feet at that distance

- B. An altitude change of approximately 360 feet at that distance
- C. An altitude change of approximately 600 feet at that distance
- D. An altitude change of approximately 100 feet at that distance

50. A pilot must hold at a fix with a 10-knot tailwind on the outbound leg. To maintain a one-minute inbound leg, the outbound timing should be adjusted how?

- A. Increase the outbound leg time to compensate for the tailwind
- B. Keep the outbound leg at exactly one minute regardless of wind
- C. Time the outbound leg from the abeam point only, ignoring wind
- D. Decrease the outbound leg time to compensate for the tailwind

51. The phrase "cleared for the approach" when multiple approaches are published at an airport authorizes the pilot to do what?

- A. Conduct any published approach of the pilot's choosing at that airport
- B. Conduct only the ILS approach to the primary instrument runway
- C. Conduct the approach only after a further specific clearance
- D. Conduct a visual approach only if the ceiling permits descent

52. A pilot encounters a static port blockage while the pitot tube remains clear during a descent. The altimeter will display what behavior?

- A. The altimeter reads higher than actual as the aircraft descends
- B. The altimeter immediately drops to zero and stops moving
- C. The altimeter freezes at the altitude where blockage occurred
- D. The altimeter reads correctly because pitot pressure compensates

53. The RNAV approach annunciation "LNAV only" indicates the receiver can provide what guidance?

- A. Both lateral and vertical guidance to published minimums
- B. Vertical guidance only, requiring a separate lateral source
- C. Angular course guidance equivalent to an ILS localizer signal
- D. Lateral navigation guidance only, with no vertical guidance

54. A pilot must determine the point of equal time (PET) between two airports. This point is most affected by which factor?

- A. The wind component along the route between the two airports
- B. The total fuel quantity loaded before the departure
- C. The magnetic variation difference between the two locations
- D. The cruising altitude selected for the enroute portion

55. The minimum safe altitude (MSA) circle depicted on an approach chart provides what assurance within its defined radius?

- A. Obstacle clearance and guaranteed navigation signal reception
- B. The minimum altitude for radar vectors in that sector only
- C. 1,000 feet of obstacle clearance within the depicted radius
- D. The minimum altitude for the published holding pattern entry

56. A pilot flying a VOR approach with the final approach course offset from the runway centerline must do what upon reaching the visual segment?

- A. Continue on the VOR final course until crossing the threshold
- B. Execute a missed approach because the course is not aligned
- C. Maneuver visually to align with the runway for landing
- D. Request radar vectors to the aligned final approach course

57. The "T" routes on enroute charts are designed for which type of navigation?

- A. RNAV-equipped aircraft using GPS for low-altitude airways
- B. Conventional VOR-to-VOR navigation only on Victor airways
- C. High-altitude jet route navigation above 18,000 feet MSL
- D. Military training route operations restricted to certain hours

58. A pilot computing density altitude on a hot day at a high-elevation airport should expect what effect on aircraft performance?

- A. Degraded performance from reduced air density at altitude
- B. Improved climb performance due to increased air density
- C. No change because density altitude affects only the airspeed
- D. Improved engine power output from the warmer intake air

59. When an approach chart depicts a "lightning bolt" or feathered symbol on the final approach course, it most commonly indicates what?

- A. A mandatory altitude crossing restriction at that fix point
- B. A stepdown fix requiring descent only after passing the fix
- C. An area of frequent convective weather along the final course
- D. The location of the visual descent point on the final segment

60. A pilot must comply with a clearance to "climb via the SID." This phrase requires the pilot to do what?

- A. Climb immediately to the filed cruise altitude without restriction
- B. Comply with all published lateral path and altitude restrictions of the SID
- C. Maintain runway heading until receiving radar vectors from departure

D. Climb at the maximum rate to expedite the departure sequence

Answer Key

1. B. Left of course — Inbound on the 090° radial with a TO indication, a left CDI deflection means the aircraft is left of the desired course; turn right to correct.
2. C. LPV approach — WAAS enables LPV approaches with vertical guidance to lower minimums, unlike basic IFR GPS.
3. B. ~740 fpm — Using $GS \times 5$, 140 kt yields 700 fpm; the listed bracket of ~740 is the nearest computed value for a 3° path.
4. B. Discontinue and go missed — Loss of RAIM before the FAF requires discontinuing the GPS approach and executing the missed approach.
5. D. Magnetic variation — The angle between true and magnetic north is variation.
6. C. Overreads, true lower — In colder-than-standard air the altimeter overreads; true altitude is lower than indicated ("high to low, look out below").
7. C. Charted depiction — A hold "as published" follows the charted holding pattern parameters.
8. D. Hypoxic hypoxia — Reduced ambient oxygen partial pressure at altitude defines hypoxic (altitude) hypoxia.
9. D. Intercepted from above — A glideslope intercepted from above is outside the capture envelope; the autopilot won't capture it.
10. B. 250 feet — The final approach segment of a non-precision approach provides 250 ft required obstacle clearance.

11. A. Roll rate — The turn coordinator's canted gyro senses roll rate in addition to yaw, showing turn entry.
12. D. Transponder, Mode C, ADS-B Out — Class A requires an operable transponder with altitude reporting and ADS-B Out.
13. B. 120 knots — With $TAS=IAS$ at altitude and a 30-kt headwind, $GS\ 90$ means $IAS = 90 + 30 = 120$ kt.
14. B. Radial and DME — A VOR radial plus a DME slant-range distance defines this fix type.
15. C. Semicircular canals — The leans arise when the semicircular canals fail to sense a slow return to level after a sustained turn.
16. D. 1.0 NM terminal — In terminal mode, GPS CDI full-scale sensitivity is 1.0 NM (5.0 enroute, 0.3 approach).
17. D. 167 degrees — $MH = TC - \text{east variation} = 175 - 8 = 167^\circ$.
18. A. No Part 91 minimum — Part 91 specifies no minimum takeoff visibility for non-commercial operations (though good practice dictates one).
19. B. Behind the wingtip — To increase arc distance, position the bearing pointer behind the wingtip so the aircraft drifts outward.
20. A. Normal descent point — The VDP on a non-precision final marks where a normal descent to landing may begin once visual.
21. A. TAS increases — At a constant IAS, TAS increases with altitude as air density decreases.

22. C. Assigned/vectored/expected/iled — Lost comms route priority: Assigned, Vectored, Expected, Filed (AVEF).
23. D. Point on glidepath — DA is a decision point on the glidepath (no level-off), unlike MDA where the aircraft levels and searches.
24. D. ~1,680–1,700 feet — $PA = \text{elev} + (29.92 - 29.42) \times 1,000 = 1,200 + 500 = 1,700$ ft; the ~1,680 bracket is the nearest listed value, higher than field elevation.
25. A. 600 and 2 — Alternate minimums with a precision approach: 600-ft ceiling and 2 SM visibility.
26. D. Disconnect autopilot — Runaway trim: disconnect the autopilot and fly manually (then address the trim).
27. C. Course and heading combined — The HSI presents course deviation and aircraft heading on one display.
28. A. 015 degrees — $MH = \text{magnetic bearing} - \text{relative bearing} = 045 - 030 = 015^\circ$.
29. C. Somatogravic illusion — Forward linear acceleration on takeoff produces a false climb (pitch-up) sensation.
30. B. Disconnect and fly raw data — A flight director commanding pitch-up with decaying airspeed is faulty; disconnect and fly raw data.
31. B. RNP 0.3 NM — The standard RNAV approach final segment uses RNP 0.3 NM.
32. D. ~12 minutes — $\text{Time to station} = (\text{minutes} \times 60) \div \text{degrees of bearing change} = (2 \times 60) \div 10 = 12$ min.

33. C. Approach procedure chart — The published IAP chart is the legally binding source for approach altitudes, routes, and procedures.

34. C. 230 knots — Maximum holding speed from 6,001–14,000 ft MSL is 230 KIAS; 9,000 ft falls in this band.

35. B. Favorable geometry/low DOP — GPS position uncertainty is reduced by favorable satellite geometry (low dilution of precision).

36. C. ~10 degrees — $WCA = \arcsin(20 \div 120) \approx 9.6^\circ$, rounded to ~10°.

37. C. Threshold crossing height — TCH is the height of the glidepath above the runway threshold.

38. B. ASI unreliable, use pitch/power — Pitot icing makes the airspeed indicator unreliable; fly known pitch and power settings.

39. B. May start regardless — Under Part 91 a pilot may begin the approach regardless of reported visibility (the descent below minimums still requires the visual references).

40. A. ~10 NM — At ~300 ft/NM on a 3° path, losing 3,000 ft needs ~10 NM.

41. D. 10 nautical miles — The standard procedure turn must be completed within 10 NM of the fix unless otherwise specified.

42. A. Northerly turning error — Turning through south in the Northern Hemisphere, the compass leads the turn (UNOS).

43. A. ~36 gallons — $2.5 \text{ h} \times 11 \text{ gph} = 27.5 \text{ gal}$; + 45-min reserve ($0.75 \times 11 = 8.25$) = $35.75 \approx 36 \text{ gal}$.

44. D. $1.3 \times$ stall speed — Approach category is based on $1.3 \times V_{so}$ (stall in landing configuration at max landing weight).

45. B. Baro-VNAV vs SBAS — LNAV/VNAV uses barometric VNAV for vertical guidance; LPV uses SBAS angular guidance.
46. A. 259 degrees — $MH = TC + \text{west variation} = 250 + 12 = 262$; $CH = MH - \text{east deviation} = 262 - 3 = 259^\circ$.
47. A. Sequencing and spacing — Speed instructions on arrival serve to sequence and space arriving traffic.
48. D. 200 feet per NM — The standard missed approach climb gradient, when unpublished, is 200 ft/NM.
49. C. ~600 feet — 60-to-1: ~100 ft per NM per degree; at 6 NM, $1^\circ \approx 600$ ft.
50. D. Decrease outbound time — A tailwind outbound lengthens the inbound leg, so decrease outbound timing to keep a one-minute inbound leg.
51. A. Any published approach — "Cleared for the approach" with multiple published lets the pilot choose any published approach.
52. C. Freezes at blockage altitude — A blocked static port freezes the altimeter at the altitude where blockage occurred.
53. D. Lateral only — "LNAV only" provides lateral navigation guidance with no vertical guidance.
54. A. Wind component — The point of equal time is most affected by the wind component along the route.
55. C. 1,000 feet clearance — The MSA circle assures 1,000 ft of obstacle clearance within its radius (not navigation guidance).

56. C. Maneuver visually — With an offset final course, the pilot maneuvers visually to align with the runway once in the visual segment.

57. A. RNAV/GPS low-altitude — T-routes are low-altitude RNAV (GPS) airways for RNAV-equipped aircraft.

58. A. Degraded performance — High density altitude (hot, high) reduces air density and degrades performance.

59. B. Stepdown fix — A feathered/lightning-bolt symbol on final commonly marks a stepdown fix permitting descent after passing it.

60. B. Comply with SID path and restrictions — "Climb via the SID" requires complying with all published lateral path and altitude restrictions.