PRACTICE EXAM 13 SIMULATION

1. Which statement most completely and correctly describes why an IFR flight may be conducted in clear weather?

A. Clear weather always requires VFR, so the flight would be illegal

B. IFR is permitted only when at least scattered clouds are present

C. IFR describes the operating rules, and a pilot may fly IFR in VMC for structure and separation

D. IFR is permitted in VMC only if the pilot has no instrument rating

2. A vacuum failure and an electrical failure each remove different instruments. Which pairing correctly matches the failure to what is lost on a traditional panel?

A. Vacuum failure removes the turn coordinator; electrical failure removes the attitude indicator

B. Both failures remove all gyroscopic instruments identically

C. Electrical failure removes the attitude and heading indicators; vacuum failure removes the turn coordinator

D. Vacuum failure removes the attitude and heading indicators; electrical failure threatens the turn coordinator

3. Between the MEA and the MOCA, which statement most precisely captures the difference?

A. The MEA guarantees only obstacle clearance; the MOCA guarantees only signal coverage

B. Both guarantee identical obstacle and signal coverage for the segment

C. The MOCA is always higher than the MEA on the same segment

D. Both guarantee obstacle clearance, but the MOCA assures signal coverage only within 22 NM of the VOR

4. A warm front and a cold front differ in their weather signatures. Which description best fits a warm front?

A. A narrow band of intense thunderstorms with rapid clearing behind

B. Widespread layered clouds and steady precipitation well ahead of the front

C. Gusty winds and showers concentrated in a short, violent passage

D. No clouds or precipitation of any kind

5. Comparing the 1-2-3 rule and the alternate minimums, which statement is the most accurate distinction?

A. Both apply the same numbers to the same airport

B. The 1-2-3 rule tests the destination to decide if an alternate is needed; the 600-2/800-2 minimums test the alternate

C. The alternate minimums decide whether an alternate is required at all

D. The 1-2-3 rule sets the visibility required to land at the alternate

6. Among the spatial illusions, which best describes the somatogravic illusion specifically?

A. A false bank sensation after a gradual, unnoticed bank

B. A tumbling sensation produced by head movement during a turn

C. Forward acceleration sensed as a nose-up pitch

D. A stationary light appearing to move in the dark

7. A pilot must choose the single most correct statement about the IFR fuel reserve. Which is it?

A. The reserve is 30 minutes whenever the weather is good

B. The reserve applies only when an alternate is required

C. No reserve is required for IFR flight in VMC

D. A 45-minute reserve is always required under IFR, beyond destination and any alternate fuel

8. Between a DA and an MDA, which statement most precisely distinguishes them?

A. The DA applies to non-precision approaches and the MDA to precision approaches

B. Both are identical altitudes used on every approach

C. The MDA permits a continuous descent on a glide path to the threshold

D. The DA is used on approaches with vertical guidance; the MDA on non-precision approaches with a level-off

9. Comparing RNAV and RNP, which statement captures the defining difference most precisely?

A. RNP uses only ground-based navaids while RNAV uses only GPS

B. RNP adds on-board performance monitoring and alerting that basic RNAV lacks

C. RNAV includes monitoring and alerting that RNP lacks

D. RNP cannot be flown using satellite navigation

10. Among the AIRMET types, which pairing is correct?

A. Sierra advises of icing; Tango advises of IFR conditions

B. Zulu advises of turbulence; Sierra advises of icing

C. Tango advises of mountain obscuration; Zulu advises of strong winds

D. Sierra advises of IFR and mountain obscuration; Zulu advises of icing

11. Which statement most completely describes the purpose of the EFC time issued with a holding clearance?

A. It aids fuel planning and tells the pilot when to leave the hold if communication is lost

B. It sets only the maximum holding airspeed

C. It defines only the inbound leg length in miles

D. It assigns only the holding pattern's turn direction

12. Between a SID and an ODP, which statement best captures their primary purposes?

A. The SID primarily organizes traffic flow; the ODP primarily provides obstacle clearance

B. Both exist primarily for obstacle clearance

C. The ODP primarily organizes traffic flow; the SID primarily provides obstacle clearance

D. Both are flown only when assigned by ATC with no pilot discretion

13. A pilot must select the most precise statement about when a procedure turn is NOT flown. Which is most complete?

A. Only when the approach is a precision approach

B. Only when the aircraft is above the procedure-turn altitude

C. Only when the pilot personally decides it is unnecessary

D. When charted NoPT, when radar-vectored to final, or when cleared straight-in

14. Comparing radiation fog and advection fog, which statement is most accurate?

A. Both reliably burn off within an hour of sunrise

B. Radiation fog forms in calm conditions and often burns off; advection fog can persist in wind

C. Advection fog forms only on clear calm nights over land

D. Radiation fog requires a steady onshore wind to form

15. Which statement most precisely describes the maximum holding airspeed structure?

A. A single 250-knot limit applies at all altitudes

B. 200 knots up to 6,000 feet, 230 knots from 6,001 to 14,000 feet, and 265 knots above 14,000 feet

C. 230 knots at all altitudes below 14,000 feet with no lower tier

D. 265 knots up to 6,000 feet, decreasing with altitude

16. Between the localizer and the glide slope, which statement correctly assigns their functions on an ILS?

A. The localizer provides vertical guidance; the glide slope provides lateral guidance

B. Both provide lateral guidance from different antennas

C. The localizer provides lateral guidance; the glide slope provides vertical guidance

D. The glide slope provides lateral guidance only inside the FAF

17. A pilot must pick the most complete statement about lost-communication route priority. Which is it?

A. Fly the most direct route the pilot judges efficient

B. Fly the assigned route, then the expected/vectored routing, then the filed route

C. Fly the filed route only, ignoring any assignment

D. Fly to the nearest airport regardless of the clearance

18. Comparing the airspeed indicator with the altimeter and VSI, which statement is most accurate about pressure sources?

A. The airspeed indicator uses both pitot and static; the altimeter and VSI use static only

B. All three instruments use both pitot and static sources

C. The altimeter uses pitot only while the airspeed indicator uses static only

D. The VSI uses both sources while the airspeed indicator uses static only

19. Which statement most precisely describes the standard-rate turn?

A. It changes heading at 3 degrees per second, completing 360 degrees in two minutes

B. It changes heading at 3 degrees per second, completing 360 degrees in one minute

C. It changes heading at 6 degrees per second

D. It is independent of airspeed for a given bank angle

20. Between WAAS-equipped and non-WAAS GPS, which statement is the most precise distinction?

A. Non-WAAS GPS can fly LPV approaches; WAAS cannot

B. Both provide identical approach capability

C. WAAS enables vertically guided approaches such as LPV that a non-WAAS receiver generally cannot

D. WAAS eliminates the need for any satellites

21. A pilot must choose the most complete description of why aviate precedes communicate. Which is it?

A. Maintaining aircraft control is the first priority before navigating or using the radio

B. Communication automatically restores failed instruments

C. ATC cannot help unless the pilot transmits first, so communicate is first

D. Navigation must always precede control of the aircraft

22. Comparing currency and proficiency, which statement is most accurate?

A. A current pilot is always proficient by definition

B. Currency is a regulatory recency minimum; proficiency is actual ability, and they can differ

C. Proficiency expires every 24 months like a knowledge test

D. Currency and proficiency are interchangeable terms

23. Which statement most precisely describes a TEMPO group in a TAF?

A. A complete, lasting change to new conditions at the stated time

B. Temporary fluctuations lasting under an hour each, totaling under half the window

C. A stated percentage probability of the conditions

D. A gradual change over the entire valid period

24. Between a high and a low pressure system in the Northern Hemisphere, which pairing is correct?

A. High: clockwise, outward, descending, generally fair; Low: counterclockwise, inward, rising, generally poor

B. High: counterclockwise, inward, rising; Low: clockwise, outward, descending

C. Both rotate clockwise with rising air

D. High brings rising air and poor weather; Low brings descending air and fair weather

25. A pilot must select the most complete statement about descending below DA or MDA to land. Which is it?

A. Reaching the MDA alone permits a landing regardless of visibility

B. Flight visibility must meet the minimum AND a required visual reference must be distinctly in sight

C. The DA may be ignored if the runway lights are bright

D. The pilot may always descend below DA to search for the runway

26. Comparing the parallel and teardrop holding entries, which statement is most accurate?

A. The parallel entry uses a 30-degree offset on the holding side

B. The parallel entry parallels the inbound course outbound on the non-holding side, then turns back to intercept

C. The teardrop entry parallels the inbound course on the non-holding side

D. Both entries are used only for nonstandard holds

27. Which statement most precisely describes structural icing requirements?

A. Visible moisture alone is sufficient regardless of temperature

B. A freezing temperature alone is sufficient regardless of moisture

C. Both visible moisture and a temperature at or below freezing must be present

D. Icing forms only above 18,000 feet in cloud

28. Between the synopsis and the adverse conditions elements of a briefing, which pairing is correct?

A. The synopsis gives the big picture; adverse conditions flag hazards that may alter the flight

B. The synopsis lists the destination's exact minimums

C. Adverse conditions provide the fronts and pressure systems

D. Both provide only the winds aloft data

29. A pilot must pick the most precise statement about DME slant range.

A. DME measures the horizontal ground distance to the station

B. DME reads zero directly over the station

C. DME measures the straight-line distance, reading the altitude above the station when overhead

D. DME provides the magnetic bearing to the station

30. Comparing the attitude indicator's role under the control-and-performance versus primary-and-supporting concepts in level flight, which statement is most accurate?

A. It is the performance instrument for altitude in both concepts

B. It is a control instrument, but the supporting (not primary) instrument for pitch in level flight

C. It is the primary instrument for pitch in level flight

D. It is the navigation instrument in both concepts

31. Which statement most completely describes why personal minimums are set in advance?

A. To remove in-the-moment pressure from go/no-go and continue/divert decisions

B. To replace the legal weather minimums entirely

C. To permit descent below published approach minimums

D. To eliminate the need for a weather briefing

32. Between a Convective SIGMET and an AIRMET, which statement is the most precise distinction?

A. A Convective SIGMET concerns thunderstorm hazards to all aircraft; an AIRMET concerns hazards mainly to lighter aircraft

B. An AIRMET is more severe than a Convective SIGMET

C. Both apply only to aircraft above 18,000 feet

D. A Convective SIGMET concerns only light icing

33. A pilot must select the most complete statement about closing an IFR flight plan.

A. It is never required to be closed

B. The transponder closes it automatically on landing everywhere

C. The tower always closes it, even at non-towered airports

D. The tower closes it at towered airports, but the pilot must close it at non-towered airports

34. Comparing fixation and omission as scan errors, which statement is most accurate?

A. Both describe spreading attention evenly across instruments

B. Fixation means leaving an instrument out entirely; omission means staring at one

C. Fixation is staring at one instrument; omission is leaving an instrument out of the scan

D. Both are beneficial techniques for instrument flight

35. Which statement most precisely captures the nose-low unusual attitude recovery sequence?

A. Raise the nose first, then reduce power, then level the wings

B. Add power, pull back, and hold the bank

C. Maintain the attitude until airspeed stabilizes

D. Reduce power, level the wings, then raise the nose

36. Between an MCA and an MRA, which pairing is correct?

A. The MCA is the lowest altitude to receive an intersection; the MRA is a crossing requirement

B. The MCA is an altitude that must be reached before crossing a fix; the MRA is the lowest altitude to receive an intersection

C. Both guarantee obstacle clearance for the whole segment

D. Both are maximum altitudes for the segment

37. A pilot must choose the most complete statement about the magnetic compass.

A. It is reliable in steady, unaccelerated flight but subject to turning and acceleration errors during maneuvers

B. It is most accurate during turns through north

C. It requires vacuum power to operate

D. It is immune to deviation from the aircraft's fields

38. Comparing LNAV and LPV minimum lines on an RNAV approach, which statement is most accurate?

A. LNAV provides vertical guidance and the lowest minimums

B. Both provide identical minimums and guidance

C. LNAV is lateral only; LPV (WAAS) adds vertical guidance and the lowest minimums

D. LPV is lateral only while LNAV is vertical

39. Which statement most precisely describes why slowing to holding speed before the fix matters?

A. It changes the inbound leg timing to 1.5 minutes

B. It resets the transponder code automatically

C. Exceeding holding speed can carry the aircraft outside the protected airspace

D. It converts the hold to a nonstandard left-turn pattern

40. Between a standard and a nonstandard hold, which statement is most accurate?

A. A nonstandard hold uses right turns and need not be stated

B. A standard hold uses left turns by default

C. Turn direction is always chosen by the prevailing wind

D. A standard hold uses right turns; a nonstandard hold uses left turns and must be specified

41. A pilot must select the most complete statement about required reports regardless of radar contact.

A. Only routine position reports over open-triangle points are required

B. No reports are required once in radar contact

C. Only reaching cruise airspeed must be reported

D. Leaving an altitude, equipment malfunctions, and defined airspeed changes must be reported

42. Comparing prevailing visibility and flight visibility, which statement is most accurate?

A. Both are measured from the cockpit in flight

B. Prevailing visibility is the in-flight cockpit value

C. Prevailing visibility is reported at the surface; flight visibility is seen from the cockpit in flight

D. Flight visibility is reported by the surface observer

43. Which statement most precisely describes the purpose of a STAR?

A. It bridges the en route structure to the approach environment and organizes arriving traffic

B. It guarantees obstacle clearance on departure

C. It serves as a course reversal at the destination

D. It replaces the need for an instrument approach

44. Between the cumulus and mature stages of a thunderstorm, which statement is most accurate?

A. The cumulus stage has both updrafts and downdrafts and is most hazardous

B. The mature stage has only weakening downdrafts

C. The cumulus stage has building updrafts; the mature stage has both updrafts and downdrafts and is most hazardous

D. Both stages are equally benign for flight

45. A pilot must choose the most complete statement about emergency authority.

A. It applies to any inconvenience to save time

B. It transfers command authority to the controller

C. It allows the pilot in command to deviate from any rule to the extent required to meet a genuine emergency

D. It permits routine shortcuts on every flight

46. Comparing the VOR check tolerances, which pairing is correct?

A. Airborne checkpoint ±4 degrees; ground checkpoint ±6 degrees

B. Ground checkpoint ±4 degrees; airborne checkpoint ±6 degrees

C. Both ground and airborne checkpoints ±2 degrees

D. Dual-VOR check allows a 10-degree difference

47. Which statement most precisely describes datalink NEXRAD radar's key limitation?

A. It cannot detect convective precipitation

B. The displayed image lags the storms' actual positions due to latency, so it is for strategic use only

C. It is available only above 18,000 feet

D. It refreshes too rapidly to interpret

48. Between the GRABCARD list and the ARROW documents, which statement is most accurate?

A. GRABCARD lists required aircraft documents; ARROW lists IFR equipment

B. Both list the same required equipment

C. GRABCARD and ARROW both describe weather products

D. GRABCARD lists additional IFR equipment; ARROW lists required aircraft documents

49. A pilot must select the most complete statement about the instrument rating's nature.

A. It is added to an existing pilot certificate, which the pilot must already hold or be applying for

B. It is a standalone certificate replacing the private certificate

C. It expires every 24 calendar months and must be re-tested

D. It can be earned with no prior certificate or training

50. Comparing the inbound and outbound legs of a hold, which statement is most accurate?

A. The outbound leg is timed and the inbound leg is adjusted

B. The inbound leg is timed to a standard length and the outbound leg is adjusted to compensate

C. Both legs are always exactly one minute regardless of wind

D. Neither leg is timed; the pilot uses DME only

51. Which statement most precisely describes the role of the briefing strip on an approach chart?

A. It contains the primary frequency, final approach course, key altitudes, and summarized missed approach

B. It contains only the airport diagram

C. It contains only the profile-view altitudes

D. It contains only the circling minimums table

52. Between an outlook briefing and a standard briefing, which pairing is correct?

A. An outlook briefing is for a flight already airborne in the hold

B. A standard briefing is requested only after losing communication

C. Both are identical in content and timing

D. An outlook briefing is for departures six or more hours away; a standard briefing is the complete pre-flight briefing

53. A pilot must choose the most complete statement about CDI sensitivity on a GPS approach.

A. Full-scale sensitivity tightens automatically from en route to terminal to approach mode

B. Sensitivity is constant in all phases of flight

C. Sensitivity is widest in the approach phase

D. The CDI shows only VOR radials during a GPS approach

54. Comparing why highs and lows produce their weather, which statement is most precise?

A. Highs feature rising, converging air that condenses into clouds

B. Lows feature descending, diverging air that warms and dries

C. Highs feature descending, diverging air that warms and dries, generally fair; lows feature rising, converging air that cools and condenses

D. Both feature descending air and fair weather

55. Which statement most precisely describes the primary instrument for pitch in a constant-airspeed climb?

A. The altimeter, since altitude is the objective

B. The attitude indicator, where the input is made

C. The airspeed indicator, since holding climb speed is the objective

D. The vertical speed indicator, showing the rate

56. Between the leans and autokinesis, which statement is most accurate?

A. The leans is a false bank sensation; autokinesis is a stationary light appearing to move

B. The leans is a stationary light appearing to move; autokinesis is a false bank sensation

C. Both are visual illusions on final approach

D. Both are vestibular tumbling sensations from head movement

57. A pilot must choose the most complete statement about partial-panel flight after a vacuum failure.

A. The attitude indicator remains the primary reference

B. The heading indicator controls bank

C. Pitch is controlled with the attitude indicator alone

D. Bank is controlled with the turn coordinator and pitch with the pitot-static instruments

58. Comparing the 30-day VOR check and the 24-month altimeter/static check, which pairing is correct?

A. Both are required every 30 days

B. Both are required every 24 calendar months

C. The VOR check is every 30 days; the altimeter/static check is every 24 calendar months

D. The VOR check is every 24 months; the altimeter/static check is every 30 days

59. Which statement most precisely describes the consequence of "ducking under" the MDA without visual references?

A. It triggers an automatic transponder code change

B. It violates the maximum holding airspeed

C. It places the aircraft in a nonstandard hold

D. It descends the aircraft below the altitude that guarantees obstacle protection

60. A pilot must integrate several factors and choose the most complete statement about a go/no-go decision involving a marginal forecast, fatigue, passenger pressure, and forecast icing in a non-known-ice aircraft.

A. Legal equipment alone justifies departing

B. The passenger's urgency should be the deciding factor

C. Climbing above the icing layer once airborne resolves the risk

D. The combined risks across the PAVE elements may exceed prudent limits, favoring delay or cancellation

Answer Key

1. C — IFR describes the operating rules, not the weather, so a pilot may fly IFR in VMC for the structure and ATC separation it provides. Clear weather does not mandate VFR, and no clouds are required for IFR. The other options invert the relationship between rules and weather.

2. D — On a traditional panel, a vacuum failure removes the attitude and heading indicators, while an electrical failure threatens the electrically driven turn coordinator. This deliberate power-source split

preserves partial-panel capability. The options that swap these or claim simultaneous total loss are incorrect.

3. D — Both the MEA and MOCA guarantee obstacle clearance, but the MOCA assures navigation signal coverage only within 22 NM of the VOR, while the MEA assures it for the entire segment. The MOCA is always equal to or lower than the MEA, not higher. This is the precise distinction between the two.

4. B — A warm front produces widespread layered (stratiform) clouds and steady precipitation well ahead of the front, often with lowering ceilings over a large area. The narrow, intense, gusty signature describes a cold front. A warm front does produce clouds and precipitation, ruling out the "none" option.

5. B — The 1-2-3 rule tests the destination forecast to decide whether an alternate is needed, while the 600-2/800-2 minimums test the alternate to decide whether it qualifies. They are different numbers, for different airports, answering different questions. Confusing them is a common error.

6. C — The somatogravic illusion is forward (linear) acceleration sensed as a nose-up pitch, tempting the pilot to push the nose down. The false bank is the leans, the tumbling sensation is Coriolis, and the moving light is autokinesis. Each illusion is distinct.

7. D — A 45-minute reserve is always required under IFR, beyond destination fuel and any required alternate fuel. The reserve does not drop to 30 minutes in good weather, apply only when an alternate is required, or disappear in VMC. It is a fixed floor.

8. D — A DA is used on approaches with vertical guidance, where the pilot decides at that altitude, while an MDA is used on non-precision approaches, where the pilot levels off and may not descend below without the required visual references. They are not identical or interchangeable. The MDA does not involve a continuous glide path to the threshold.

9. B — RNP adds on-board performance monitoring and alerting that basic RNAV lacks: it monitors whether the required accuracy is being achieved and warns the pilot if not. Both can use GPS, and RNAV does not include the monitoring capability. The monitoring-and-alerting feature is the defining difference.

10. D — AIRMET Sierra advises of IFR conditions and mountain obscuration, and AIRMET Zulu advises of icing and freezing levels. Tango covers turbulence and strong surface winds. The other options scramble the pairings.

11. A — The EFC time aids fuel and continuation planning and, critically, tells the pilot when to leave the holding fix if two-way communication is lost. It is not limited to airspeed, leg length, or turn direction. Its lost-communication role is what makes it more than informational.

12. A — A SID primarily organizes traffic flow and simplifies clearance delivery, while an ODP primarily provides obstacle clearance and may be flown at the pilot's discretion. They differ in purpose and initiation. The ODP is pilot-initiated; the SID is ATC-assigned.

13. D — A procedure turn is not flown when the chart depicts NoPT, when being radar vectored to final, or when cleared straight-in. The precision/non-precision type, the procedure-turn altitude, and personal preference do not by themselves cancel a charted procedure turn. This is the complete set of conditions.

14. B — Radiation fog forms in calm conditions and often burns off with morning heating, while advection fog forms when warm moist air moves over a colder surface and can persist or thicken in wind. They behave differently because advection fog's moisture is continuously replenished. Anticipating the type informs the go/no-go.

15. B — The maximum holding airspeed tiers are 200 knots up to 6,000 feet, 230 knots from 6,001 to 14,000 feet, and 265 knots above 14,000 feet. There is no single all-altitude limit, and the values increase with altitude. Slowing to the applicable speed before the fix keeps the aircraft within protected airspace.

16. C — The localizer provides lateral guidance aligned with the runway centerline, and the glide slope provides vertical guidance. They are distinct components of the ILS. Centering both needles flies the aircraft down the approach.

17. B — The lost-communication route priority is the assigned route, then the expected/vectored routing, then the filed route (AVE-F). The pilot does not improvise a direct route, ignore the assignment, or divert to the nearest airport. Predictability for ATC governs.

18. A — The airspeed indicator uses both pitot (ram) and static pressure, while the altimeter and VSI use the static source only. This is why a pitot blockage uniquely corrupts the airspeed indication. The other options misassign the sources.

19. A — A standard-rate turn changes heading at 3 degrees per second, completing a 360-degree turn in two minutes. It is not one minute or 6 degrees per second, and the required bank increases with airspeed. These figures underlie holding timing and procedure turns.

20. C — WAAS enables vertically guided approaches such as LPV that a non-WAAS receiver generally cannot fly, by broadcasting corrections that sharpen accuracy and integrity. A non-WAAS GPS is generally limited to lateral guidance. WAAS does not eliminate the need for satellites.

21. A — Aviate precedes communicate because maintaining aircraft control is the first priority before navigating or using the radio. Communication does not restore instruments, and navigation does not precede control. The hierarchy is aviate, navigate, communicate.

22. B — Currency is a regulatory recency minimum, while proficiency is actual ability to fly safely, and the two can diverge. A current pilot is not automatically proficient, the terms are not interchangeable, and proficiency does not expire on a fixed schedule. Personal minimums help bridge the gap.

23. B — A TEMPO group denotes temporary fluctuations lasting under an hour each and totaling under half the window. It is not a lasting FM change, a probability, or a gradual change over the whole period. TEMPO interrupts the prevailing forecast rather than replacing it.

24. A — In the Northern Hemisphere a high features clockwise, outward, descending air and generally fair weather, while a low features counterclockwise, inward, rising air and generally poor weather. The descending air of a high warms and dries; the rising air of a low cools and condenses. The other options invert these.

25. B — To land from an instrument approach, flight visibility must meet the published minimum AND a required visual reference must be distinctly in sight. Reaching the MDA alone does not permit a landing, the DA cannot be ignored, and ducking below DA to search is not permitted. Both visibility and a visual reference are required.

26. B — The parallel entry parallels the inbound course outbound on the non-holding side, then turns back toward the holding side to intercept the inbound course. The 30-degree offset describes the teardrop entry, and these entries apply to both standard and nonstandard holds. The parallel entry serves arrivals from the sector opposite the holding side.

27. C — Structural icing requires both visible moisture and a temperature at or below freezing simultaneously. Moisture alone or freezing temperature alone is insufficient, and icing is not confined to altitudes above 18,000 feet. Both conditions must coexist at the aircraft.

28. A — The synopsis gives the big-picture causes — fronts, pressure systems, and air masses — while the adverse conditions element flags hazards that may alter or cancel the flight. The synopsis does not provide minimums, and adverse conditions are not the fronts themselves. They serve different briefing roles.

29. C — DME measures slant range — the straight-line distance from aircraft to station — reading the altitude above the station when directly overhead rather than zero. It does not measure horizontal ground distance or provide bearing. The slant-range error is greatest when high and close.

30. B — The attitude indicator is a control instrument, but under the primary-and-supporting concept it is the supporting (not primary) instrument for pitch in level flight, where the altimeter is primary. It is not the performance or navigation instrument. The primary instrument is whichever most directly shows the objective.

31. A — Personal minimums are set in advance to remove in-the-moment pressure from the go/no-go and continue/divert decisions, providing limits more conservative than the legal minimums. They do not replace legal minimums, permit descent below published approach minimums, or eliminate the briefing. Set on the ground, they are honored in the air.

32. A — A Convective SIGMET concerns thunderstorm hazards significant to all aircraft, while an AIRMET concerns hazards affecting mainly lighter aircraft and less experienced pilots. The AIRMET is less severe, neither is limited to high altitude, and the Convective SIGMET implies severe, not light, hazards. The all-aircraft thunderstorm focus distinguishes the Convective SIGMET.

33. D — The tower closes an IFR flight plan at a towered airport, but at a non-towered airport the pilot must close it. It is not closed automatically by the transponder, and it does need to be closed. Forgetting at a non-towered field can trigger an unnecessary search.

34. C — Fixation is staring at one instrument to the exclusion of others, while omission is leaving an instrument out of the scan entirely. Neither is beneficial, and the definitions are not interchangeable. Both degrade the cross-check.

35. D — In a nose-low unusual attitude with increasing airspeed, the recovery is to reduce power, level the wings, then raise the nose. Leveling the wings before pulling avoids tightening the spiral and overstressing the airframe. Adding power or pulling while banked is incorrect.

36. B — The MCA is an altitude that must be reached before crossing a fix where higher terrain lies ahead, while the MRA is the lowest altitude at which an intersection can be received. They address crossing and reception respectively. Neither is a maximum or a whole-segment obstacle guarantee.

37. A — The magnetic compass is reliable in steady, unaccelerated flight but subject to turning and acceleration errors during maneuvers. It is least accurate during turns, requires no vacuum power, and is subject to deviation from the aircraft's fields. Its steady-flight reliability is the complete statement.

38. C — The LNAV line is lateral only, while the LPV line (WAAS) adds vertical guidance and offers the lowest RNAV minimums. They are not identical, and LPV is not lateral-only. Equipment capability determines which line may be flown.

39. C — Exceeding holding speed can carry the aircraft outside the protected airspace, especially in the turns and with wind. It does not change the leg timing, reset the transponder, or convert the hold to nonstandard. Loss of protected airspace is the real consequence.

40. D — A standard hold uses right turns, while a nonstandard hold uses left turns and must be specified by ATC. Turn direction is not chosen by wind, and the default is right turns. The nonstandard hold must always be explicitly stated.

41. D — Leaving an altitude, equipment malfunctions, and defined airspeed changes must be reported whether or not in radar contact. Open-triangle points are on-request only, reaching cruise speed is not an always-required report, and radar contact does not waive all reports. These are the always-required reports.

42. C — Prevailing visibility is the horizontal distance reported at the surface, while flight visibility is the distance the pilot can see from the cockpit in flight. They are measured differently, by different observers. The other options conflate or reverse the two.

43. A — A STAR bridges the en route structure to the approach environment and organizes arriving traffic, as the arrival counterpart to the SID. It does not guarantee departure obstacle clearance, serve as a course reversal, or replace an approach. Its role is the transition into the terminal area.

44. C — The cumulus stage has building updrafts only, while the mature stage has both updrafts and downdrafts and is the most hazardous, with heavy precipitation, hail, lightning, and windshear. The cumulus stage is not the most hazardous, and the mature stage is not benign. The mature stage is the deadliest.

45. C — Emergency authority allows the pilot in command to deviate from any rule to the extent required to meet a genuine emergency. It is not for inconvenience or routine shortcuts and does not transfer command to the controller. It exists so the pilot can act without first seeking permission.

46. B — The ground checkpoint VOR tolerance is ±4 degrees and the airborne checkpoint tolerance is ±6 degrees. VOT checks are ±4, and a dual-VOR check allows a 4-degree difference. The other options swap or exaggerate these tolerances.

47. B — Datalink NEXRAD radar lags the storms' actual positions because of latency, so it is suitable for strategic routing only, not close-in avoidance. It does detect precipitation, is not limited to high altitude, and the problem is staleness, not refresh speed. Wide margins are essential when using it.

48. D — GRABCARD lists additional equipment required for IFR, while ARROW lists required aircraft documents (Airworthiness, Registration, operating limitations/ROB, Weight and balance). They serve different purposes and are not the same list. The options that swap or conflate them are incorrect.

49. A — An instrument rating is added to an existing pilot certificate, which the pilot must already hold or be applying for concurrently. It does not replace the private certificate, expire every 24 months, or require no prior certificate. The rating itself, once earned, does not expire.

50. B — The inbound leg is timed to a standard length and the outbound leg is adjusted to compensate, because the inbound leg must be consistent. The outbound leg is not the timed leg, and the inbound leg is affected by wind. DME holding is an alternative, not the only method.

51. A — The briefing strip at the top of an approach chart contains the primary navigation frequency, the final approach course, key altitudes, and summarized missed approach instructions. The airport diagram, profile altitudes, and circling minimums occupy other regions. The briefing strip is designed to be briefed before the approach.

52. D — An outlook briefing is requested when the proposed departure is six or more hours away, while a standard briefing is the complete pre-flight briefing. They differ in timing and purpose. The other options misdescribe both.

53. A — On a GPS approach, the CDI full-scale sensitivity tightens automatically from en route to terminal to approach mode. It is not constant or widest in the approach phase, and the CDI displays GPS guidance, not VOR radials, during a GPS approach. The pilot must confirm the active mode before relying on the guidance.

54. C — A high features descending, diverging air that warms and dries, generally producing fair weather, while a low features rising, converging air that cools and condenses, generally producing poor weather. The other options invert the air motions or claim both produce fair weather. The vertical air motion explains the weather.

55. C — In a constant-airspeed climb, the airspeed indicator is primary for pitch because holding the target climb speed is the objective and it shows that objective most directly. The attitude indicator is supporting, and the altimeter and VSI are not primary for pitch in this maneuver. The primary instrument shifts with the objective.

56. A — The leans is a false bank sensation, while autokinesis is a stationary light appearing to move in the dark. They are distinct illusions — the leans vestibular, autokinesis visual. The options that swap or merge them are incorrect.

57. D — On partial panel after a vacuum failure, bank is controlled with the turn coordinator and pitch with the pitot-static instruments, since the attitude and heading indicators are lost. The attitude indicator is not available, and the heading indicator is vacuum-driven and also lost. The turn-coordinator-and-pitot-static combination is correct.

58. C — The VOR accuracy check is required within the preceding 30 days, while the altimeter/static check is required within the preceding 24 calendar months. The shorter VOR cycle reflects how quickly navigation precision can drift. The other options swap or equate the intervals.

59. D — "Ducking under" the MDA without the required visual references descends the aircraft below the altitude that guarantees obstacle protection on a non-precision approach. It does not change the transponder, violate holding speed, or create a nonstandard hold. The hazard is loss of obstacle clearance.

60. D — The combined risks across the PAVE elements — a marginal forecast, fatigue, passenger pressure, and forecast icing in a non-known-ice aircraft — may exceed prudent limits, favoring delay or cancellation. Legal equipment alone, passenger urgency, and climbing through icing do not resolve the aggregated risk. Recognizing when combined risks exceed prudent limits is the essence of aeronautical decision-making.