PRACTICE EXAM 20

1. A Recreational Pilot holding only the cross-country endorsement plans a 65-NM flight whose route would clip Class C airspace. What is the legal status?

A. Permitted, because the cross-country endorsement covers it

B. Not permitted into Class C without the controlled-airspace endorsement; the route must avoid it

C. Permitted, since the flight exceeds 50 NM

D. Permitted if the pilot monitors the approach frequency

2. On a hot, humid afternoon at a 5,000-foot field, a pilot near gross weight plans a short-runway departure over trees. Which combination of factors and speed is most relevant?

A. Low density altitude and best rate of climb (Vy)

B. A tailwind and never-exceed speed (Vne)

C. A headwind and maneuvering speed (Va)

D. High density altitude and best angle of climb (Vx), with a reduced climb gradient

3. A pilot in a 60° banked turn on the base-to-final turn slows while pulling back. What is the compounded risk?

A. An accelerated stall, because load factor raises the stall speed near the ground

B. An overspeed condition exceeding Vne

C. A reduction in stall speed providing extra margin

D. A spontaneous recovery to level flight

4. A pilot reads a METAR showing "OVC008" and a TAF forecasting "TEMPO 1/2SM FG." As a daytime-VFR Recreational Pilot, what does this indicate for the planned flight?

A. Conditions at or below VFR minimums, favoring a no-go decision

B. Ideal VFR conditions for departure

C. A requirement to file an IFR flight plan

D. A need only to add fuel reserve

5. A pilot flying into both lower pressure and colder air without resetting the altimeter faces what danger?

A. The altimeter reads exactly correct

B. The altimeter under-reads, showing too high

C. The airspeed indicator fails first

D. The altimeter over-reads, so the aircraft is lower than indicated

6. A pilot computes a 60-NM leg into a 20-knot headwind with a true airspeed of 120 knots. How long will it take?

A. 30 minutes

B. 36 minutes

C. 25 minutes

D. 45 minutes

7. A Recreational Pilot with a current flight review and current 90-day landings, but 190 days since last logging PIC time, wishes to fly with a passenger. What is the status?

A. Legal, because passenger currency is met

B. Legal, because the flight review is current

C. Legal if the passenger is a pilot

D. Not legal as PIC until instructor training and an endorsement are obtained

8. A pilot notices the ammeter showing discharge in cruise while the engine runs normally. What failed, and why does the engine keep running?

A. The alternator failed; the engine runs because the magnetos are independent of the electrical system

B. Both magnetos failed; the battery sustains the engine

C. The pitot tube blocked, stopping charging

D. The static port obstructed the alternator

9. A pilot weighs marginal weather, an unfamiliar airplane, and personal fatigue against a schedule pressure. Integrating these is best described as what?

A. A weight-and-balance computation

B. A risk-management process leading to a go/no-go decision

C. A magneto run-up check

D. A wind-triangle solution

10. A pilot loads an airplane 40 pounds under gross weight but finds the CG 1 inch aft of the rear limit. What is correct?

A. Safe, because weight is within limits

B. Unsafe; the airplane must be reloaded before flight

C. The aft CG beneficially lowers stall speed

D. Acceptable for a short local flight

11. A pilot sees a Convective SIGMET and an icing AIRMET along the route. As a daytime-VFR pilot with no anti-ice equipment, what is the best decision?

A. Depart and climb above both hazards

B. Continue VFR while remaining clear of clouds

C. Delay, reroute, or cancel, since both indicate conditions to avoid

D. Request special VFR through the area

12. A pilot computes weight and balance with a total moment of 81,000 lb-in at 2,000 lb. What is the CG, and what else must be checked?

A. 39.0 inches; only the fuel quantity

B. 40.5 inches; the total weight against the maximum gross weight

C. 42.0 inches; only the empty weight

D. 38.0 inches; nothing further

13. A pilot on the winds aloft forecast reads a wind from 360° true and a destination runway numbered "36." What must be reconciled before assuming a direct headwind?

A. The wind is true while the runway is magnetic, so variation must be applied

B. Both are magnetic and need no conversion

C. The runway number is in true degrees

D. The wind is already magnetic

14. A pilot feels a strong sensation of banking after losing the horizon in haze, though instruments show wings level. What is occurring, and what is the defense?

A. An attitude-indicator failure; switch to the compass

B. Spatial disorientation; maintain visual reference and avoid instrument conditions

C. Carburetor icing; apply carb heat

D. A normal sensation requiring no action

15. A pilot at altitude where hypoxia is possible feels euphoric with slowed responses. What is the correct action, and why is recognition hard?

A. Breathe faster; hypoxia is obvious to the sufferer

B. Use oxygen and descend; hypoxia impairs the judgment needed to recognize it

C. Increase cabin heat; hypoxia causes chills

D. Continue and monitor; symptoms resolve on their own

16. A pilot must avoid an active Restricted Area along the route. What is the correct understanding?

A. Avoid it unless permission is obtained from the controlling agency

B. Enter freely since recreational flights are exempt

C. Climb above it to remain legal

D. Request special VFR to cross it

17. A pilot plans fuel for a flight into a forecast headwind. How should the plan change, and why?

A. Reduce fuel, since headwinds save fuel

B. Make no change, since wind does not affect fuel

C. Increase fuel, since the headwind increases time en route and burn

D. Plan for less time en route

18. A pilot reads "BKN012 OVC025" on a METAR. What is the ceiling, and why?

A. 2,500 feet, the overcast layer

B. The average of the two layers

C. 1,200 feet, the lowest broken layer

D. There is no ceiling

19. A pilot in cruise applies carburetor heat after a gradual RPM loss; the engine roughens then smooths. What occurred, and what is the lesson?

A. The mixture was too lean; no action needed

B. A magneto failed and recovered

C. The alternator failed

D. Carburetor ice formed and melted; carb ice occurs even in warm weather

20. A pilot facing get-there-itis as a daytime-only Recreational Pilot, with the destination reachable only after sunset, recognizes what?

A. Night flight is fine with landing lights

B. A small rule exception is justified by the schedule

C. A higher cruise speed solves it

D. Arriving after dark would exceed the certificate; the pressure is a hazard to resist

21. A pilot computes that an airplane burning 8 gallons per hour with 36 gallons usable must retain a 30-minute reserve. How much is available for the trip?

A. 32.0 gallons

B. 36.0 gallons

C. 28.0 gallons

D. 30.0 gallons

22. A pilot determines an aircraft on a constant relative bearing is not moving on the windscreen but growing larger. What is indicated, and what compounds the danger?

A. A collision course; the eye is drawn to motion, not stationary targets

B. The aircraft is moving away; no action needed

C. A ground object; disregard

D. Safe vertical separation; continue

23. A Recreational Pilot certificate applicant who is 39 years and 10 months old at the medical exam obtains a third-class medical. How long is it valid for these privileges, and why?

A. 24 calendar-months, because the pilot turns 40 during validity

B. 60 calendar-months, because age at the exam was under 40

C. 12 calendar-months, due to the pilot's age

D. 48 calendar-months, an average of the two

24. A pilot weighs whether an aft-of-limit or forward-of-limit CG is more hazardous. Which is correct, and why?

A. Forward is worse because it lowers stall speed

B. Both are equally hazardous in all respects

C. Neither poses a real hazard

D. Aft beyond limits is especially dangerous because stall or spin recovery may be impossible

25. A pilot reads a TAF group "FM151800 27020G30KT." What does the "FM151800" signify?

A. A rapid, significant change beginning at 1800Z on the 15th

B. A temporary fluctuation under an hour

C. A 15 percent probability of those conditions

D. A gradual change ending at 1800Z

26. A Recreational Pilot operating within the 50-NM limit plans a route that would enter Class D airspace. Without the controlled-airspace endorsement, what must the pilot do?

A. Enter since it is within 50 NM

B. Climb above the Class D ceiling and continue

C. Contact the tower only after entering

D. Reroute to avoid the Class D airspace

27. A pilot enters fuel quantity in gallons instead of pounds in a weight-and-balance moment calculation. What is the result?

A. The CG is unaffected

B. The total weight is grossly understated, producing a false and unsafe result

C. Only the moment changes, not the weight

D. The error self-corrects in the division

28. A pilot recognizes the thought "I've flown in worse; I can make it" before launching into marginal weather. Which attitude and antidote apply?

A. Macho; "Taking chances is foolish"

B. Anti-authority; "Follow the rules"

C. Resignation; "I'm not helpless"

D. Impulsivity; "Not so fast"

29. A pilot must clear rising terrain just past a short, high-density-altitude runway. Which speed gives the steepest climb, and what limits it?

A. Best rate of climb (Vy), unaffected by density altitude

B. Maneuvering speed (Va), for structural protection

C. Never-exceed speed (Vne), for maximum performance

D. Best angle of climb (Vx), with the gradient reduced by high density altitude

30. A pilot reads "SCT006 BKN015 OVC040" and must determine the ceiling. What is it?

A. 600 feet, the scattered layer

B. 1,500 feet, the lowest broken layer

C. 4,000 feet, the overcast layer

D. There is no ceiling below 5,000 feet

31. A pilot encounters lowering ceilings 30 NM from departure, well within the 50-NM limit. What is the best decision, and why is the distance irrelevant?

A. Continue, since the flight is within the limit

B. Climb through the layer to clear air

C. Turn back or divert; the weather hazard is independent of the distance limit

D. Descend to remain visual at very low altitude

32. A pilot computes a 75-NM leg flown in 50 minutes. What was the groundspeed, and what relationship was used?

A. 80 knots, using Distance × Time

B. 90 knots, using Distance ÷ Time in hours

C. 100 knots, using Time ÷ Distance

D. 120 knots, using Groundspeed × Time

33. A pilot considering a night arrival as a Recreational Pilot recognizes what about the certificate?

A. Night flight is allowed with landing lights

B. Night flight is allowed within 50 NM

C. Night flight is allowed with a passenger

D. Night flight is not permitted except while training toward a higher certificate with proper endorsement

34. A pilot reviewing the standard atmosphere applies the lapse rate to estimate conditions aloft. Which value and reference are correct?

A. 5°C per 1,000 feet from 0°C at sea level

B. 1°F per 1,000 feet from 20°C

C. About 2°C per 1,000 feet from 15°C at sea level

D. 3.5°C per 1,000 feet from 25°C

35. A pilot dismisses a checklist item, reasoning that experience makes it unnecessary. Which attitude and antidote apply?

A. Resignation; "I'm not helpless"

B. Impulsivity; "Not so fast"

C. Invulnerability; "It could happen to me"

D. Anti-authority; "Follow the rules, they are usually right"

36. A pilot must determine the minimum safe altitude crossing a congested area en route. Which applies, and what is its purpose?

A. 1,000 feet above the highest obstacle within a 2,000-foot radius, to protect persons below and allow a glide

B. 500 feet above the surface, for any terrain

C. 2,000 feet above the surface at all times

D. No minimum over a city

37. A pilot interpreting a VASI showing red over red on short final to a high-density-altitude runway understands what, and why is prompt correction important?

A. On glidepath; maintain the approach

B. Too high; reduce power

C. Too low; the aircraft is below the safe glidepath, and reduced climb performance makes recovery harder

D. The VASI is inoperative; ignore it

38. A pilot departing behind a landed heavy jet plans the takeoff to avoid wake turbulence. What is the safest plan, and why?

A. Rotate at the jet's rotation point and climb beneath its path

B. Depart immediately to stay ahead of the vortices

C. Use a shorter takeoff roll regardless of the touchdown point

D. Be airborne beyond the jet's touchdown point and climb above and upwind, because vortices sink and drift

39. A pilot weighs the legality of a flight 55 NM from the departure airport without endorsements. What is correct?

A. Legal, because it is within 60 NM

B. Legal, because the limit resets in flight

C. Legal on the return leg only

D. Illegal, because it exceeds the 50-NM limit without the cross-country endorsement

40. A pilot recognizes early hypoxia in a passenger at altitude. What is the most appropriate immediate action?

A. Tell the passenger to breathe more rapidly

B. Increase cabin temperature for comfort

C. Descend to a lower altitude and provide oxygen

D. Continue and monitor the passenger

41. A pilot reflecting on the leading cause of fatal GA accidents and how to avoid it concludes what?

A. Engine failures dominate; carry spare parts

B. ATC errors dominate; rely less on controllers

C. Pilot judgment errors dominate; disciplined ADM and conservative decisions are the defense

D. Airframe defects dominate; inspect more often

42. A pilot computes density altitude on a hot, humid day at a 4,000-foot field. What is the performance implication?

A. Improved climb and shorter takeoff roll

B. Density altitude well above field elevation, lengthening takeoff and reducing climb

C. No change from sea-level performance

D. A lower stall speed making takeoff easier

43. A pilot must distinguish a Prohibited Area from a Restricted Area when planning. Which is correct?

A. Both prohibit flight at all times

B. Both may be entered freely

C. A Prohibited Area bars flight entirely, while a Restricted Area restricts it and may be entered with permission when inactive

D. A Restricted Area never permits entry

44. A pilot reviewing fitness with IMSAFE notes recent use of a sedating medication. What is the prudent course, and which element applies?

A. Medication; delay the flight, as the medication can impair performance

B. Stress; proceed with caffeine

C. Illness; fly a shorter route

D. Fatigue; depart and monitor alertness

45. A pilot must decide whether a destination 70 NM away inside Class D airspace is reachable with only the cross-country endorsement. What is correct?

A. Reachable, because the cross-country endorsement covers distance and airspace

B. Reachable if the tower is closed at all times

C. Not reachable into Class D without the controlled-airspace endorsement

D. Reachable because it exceeds 50 NM

46. A pilot reading a winds aloft forecast finds no wind data shown for a level near the station elevation. Why?

A. The winds are always calm there

B. The station lacks an anemometer

C. Wind data is not forecast within about 1,500 feet of the station elevation

D. That level is always in cloud

47. A pilot computes fuel for a 1-hour-30-minute flight at 10 gallons per hour with a 30-minute reserve. How much total fuel is required?

A. 15 gallons

B. 18 gallons

C. 25 gallons

D. 20 gallons

48. A pilot recognizes the thought "Regulations are too conservative; I'll skip the full weather check." Which attitude and antidote apply?

A. Anti-authority; "Follow the rules, they are usually right"

B. Macho; "Taking chances is foolish"

C. Impulsivity; "Not so fast"

D. Resignation; "I'm not helpless"

49. A pilot weighing a go/no-go decision integrates weather, aircraft, route, and personal fitness. This convergence is best described as what?

A. The wind triangle

B. The magneto check

C. The go/no-go decision, revisited continuously in flight

D. The standard briefing sequence

50. A pilot reflecting on the most valuable mindset in aviation decision-making concludes which sentiment is best?

A. "I think we can make it"

B. "We've come this far"

C. "Let's not risk it"

D. "The forecast was probably wrong"

Answer Key & Explanations

1. B — Class C requires the controlled-airspace endorsement regardless of the cross-country endorsement, so the route must avoid it. The two endorsements address different limitations, and distance does not authorize controlled-airspace entry.

2. D — A hot, humid, high-elevation departure near gross weight means high density altitude, calling for best angle of climb (Vx) to clear obstacles, with a reduced climb gradient. Both the lift and the climb performance suffer in thin air.

3. A — A slowing, back-pressured 60° turn near the ground raises the load factor, which raises the stall speed and can cause an accelerated stall. This low-altitude scenario is a leading cause of stall-spin accidents.

4. A — An overcast at 800 feet with forecast half-mile fog is at or below VFR minimums, favoring a no-go decision for a daytime-VFR pilot. The conditions do not support visual flight.

5. D — Flying into lower pressure and colder air without resetting causes the altimeter to over-read, so the aircraft is actually lower than indicated — "high to low, look out below." This is a terrain-clearance hazard.

6. B — With a 20-knot headwind, groundspeed = 120 − 20 = 100 kt; time = 60 ÷ 100 × 60 = 36 minutes. The headwind reduces groundspeed, lengthening the leg.

7. D — The Recreational-specific 180-day PIC recency rule means that after 190 days without logged PIC time, instructor training and an endorsement are required before acting as PIC — regardless of flight review or passenger currency.

8. A — An ammeter discharge with the engine running normally indicates the alternator failed, and the engine keeps running because the magnetos are independent of the electrical system. Electrical failure is not engine failure.

9. B — Integrating marginal weather, an unfamiliar airplane, fatigue, and schedule pressure is a risk-management process leading to a go/no-go decision. It weighs all factors together.

10. B — A CG aft of the rear limit is unsafe even under gross weight, so the airplane must be reloaded. Weight and CG are independent checks.

11. C — A Convective SIGMET and an icing AIRMET both indicate conditions a daytime-VFR pilot with no anti-ice equipment must avoid, so the best decision is to delay, reroute, or cancel. Climbing over or picking through such weather is unsafe.

12. B — CG = 81,000 ÷ 2,000 = 40.5 inches, and the total weight must also be checked against the maximum gross weight. Both checks must pass.

13. A — The winds aloft direction is true while the runway number is magnetic, so variation must be applied before assuming a direct headwind. Failing to reconcile them produces an error.

14. B — A convincing false sense of banking after losing the horizon is spatial disorientation, defended against by maintaining visual reference and avoiding instrument conditions. The instruments, not the sensation, are correct.

15. B — Euphoria and slowed responses near one's altitude ceiling are early hypoxia signs, calling for oxygen and descent. Recognition is hard because hypoxia impairs the judgment needed to notice it.

16. A — A pilot must avoid an active Restricted Area unless permission is obtained from the controlling agency. Recreational flights are not exempt, and overflying or special VFR does not bypass it.

17. C — A forecast headwind increases time en route and therefore fuel burn, so fuel must be increased. Underestimating wind effect is a common cause of fuel exhaustion.

18. C — A ceiling is the lowest broken or overcast layer, so "BKN012 OVC025" gives a ceiling of 1,200 feet. The lower broken layer establishes the ceiling.

19. D — A gradual RPM loss with carb heat roughening then smoothing the engine indicates carburetor ice that melted clear. The lesson is that carb ice forms even in warm weather.

20. D — Recognizing that a post-sunset arrival would exceed the daytime-only certificate, and that the pressure is a hazard, reflects sound judgment. No landing light or speed increase changes the regulatory limit.

21. A — Available for the trip = 36 gal − (0.5 hr × 8 gph reserve) = 36 − 4 = 32 gallons. The reserve is held back from the usable total.

22. A — A target on a constant relative bearing not moving but growing larger is on a collision course, and the danger is compounded because the eye is drawn to motion and may overlook the stationary target. Deliberate scanning is the defense.

23. B — The medical was issued while the pilot was under 40, so it is valid for 60 calendar-months for these privileges. The age at the date of the exam, not later, determines the duration.

24. D — An aft CG beyond limits is especially dangerous because stall or spin recovery may be impossible due to insufficient elevator authority. A forward-of-limit CG raises stall speed and control forces but is generally less lethal.

25. A — "FM151800" denotes a rapid, significant change beginning at 1800Z on the 15th day. FM groups mark a quick transition to new prevailing conditions.

26. D — Without the controlled-airspace endorsement, the pilot must reroute to avoid Class D, since it requires ATC communication. Being within 50 NM does not authorize entry, and overflying or late contact does not cure it.

27. B — Entering fuel in gallons instead of pounds grossly understates the total weight, producing a false and unsafe result. Fuel must be converted at about 6 pounds per gallon first.

28. A — "I've flown in worse; I can make it" is the macho attitude, countered by "Taking chances is foolish." It pushes pilots beyond their or the aircraft's limits.

29. D — Best angle of climb (Vx) gives the steepest gradient to clear an obstacle, but high density altitude reduces the achievable gradient. The thin air degrades the climb performance.

30. B — A ceiling is the lowest broken or overcast layer; SCT006 is scattered and does not count, so BKN015 at 1,500 feet is the ceiling. Scattered layers never establish a ceiling.

31. C — A daytime-VFR pilot facing lowering ceilings must turn back or divert, and the distance is irrelevant because the weather hazard is independent of the 50-NM limit. Staying within the distance rule does not make deteriorating weather safe.

32. B — Groundspeed = 75 NM ÷ (50/60 hr) = 90 knots, using Distance ÷ Time in hours. Converting minutes to a fraction of an hour before dividing gives the correct speed.

33. D — Night flight is not permitted for a Recreational Pilot except while receiving training toward a higher certificate with proper endorsement. Landing lights, distance, or a passenger do not authorize it.

34. C — The standard temperature lapse rate is about 2°C per 1,000 feet from a 15°C sea-level standard. These standard values underlie altimetry and performance estimates.

35. D — Dismissing a checklist item because experience makes it "unnecessary" is the anti-authority attitude, countered by "Follow the rules. They are usually right." Checklists exist to catch what memory misses.

36. A — Over a congested area, the minimum safe altitude is 1,000 feet above the highest obstacle within a 2,000-foot radius, to protect persons below and allow a safe glide. This is the standard congested-area rule.

37. C — Red over red on a VASI means too low, and prompt correction is vital because the aircraft is below the safe glidepath; at a high-density-altitude runway, reduced climb performance makes recovery harder. The thin air limits the ability to arrest the descent.

38. D — Departing behind a landed heavy jet, the pilot should be airborne beyond the jet's touchdown point and climb above and upwind, because vortices sink and drift. Rotating early beneath its path would place the airplane in the descending vortices.

39. D — A flight 55 NM from the departure airport without endorsements exceeds the 50-NM limit and is illegal without the cross-country endorsement. The limit does not reset in flight and is measured from departure.

40. C — Early hypoxia in a passenger at altitude calls for descending to a lower altitude and providing oxygen. Rapid breathing or added warmth does not address the oxygen deficiency.

41. C — Pilot judgment errors dominate fatal general aviation accidents, so disciplined aeronautical decision-making and conservative choices are the defense. Mechanical, ATC, and structural causes are far less frequent.

42. B — On a hot, humid day at a 4,000-foot field, density altitude is well above field elevation, lengthening the takeoff roll and reducing climb. Standard sea-level performance does not apply.

43. C — A Prohibited Area bars flight entirely, while a Restricted Area restricts flight and may be entered with permission when inactive. The two differ in whether entry is ever allowed, and neither may be entered freely.

44. A — Recent use of a sedating medication falls under Medication in IMSAFE, and the prudent course is to delay the flight, since such medication can impair performance. Flying impaired is unsafe and prohibited.

45. C — A destination inside Class D is not reachable without the controlled-airspace endorsement, regardless of distance or the cross-country endorsement. Class D requires ATC communication, which needs that specific endorsement.

46. C — On the winds aloft forecast, no wind is shown for a level within about 1,500 feet of the station's elevation, because that data is not forecast. Temperatures are likewise omitted for the lowest levels.

47. D — Fuel = (1.5 hr × 10 gph) + (0.5 hr × 10 gph) = 15 + 5 = 20 gallons. The 30-minute reserve adds five gallons.

48. A — Dismissing regulations as too conservative and skipping a required weather check is the anti-authority attitude, countered by "Follow the rules. They are usually right." This guards against exactly such corner-cutting.

49. C — Integrating weather, aircraft, route, and personal fitness into one departure judgment is the go/no-go decision, revisited continuously in flight. It is the convergence point of preflight and in-flight risk assessment.

50. C — "Let's not risk it" captures mature judgment, while "I think we can make it" reflects the dangerous optimism behind many accidents. Valuing the conservative choice is the mark of a safe pilot.