PRACTICE EXAM 25

1. A Sport Pilot may carry a maximum of how many passengers under any conditions?

A. As many as the aircraft has seats

B. Two passengers in daytime VFR

C. One passenger only

D. No passengers at all

2. The two independent magnetos in the ignition system provide:

A. Redundancy and a more complete fuel-air burn

B. Electrical power to charge the battery

C. The vacuum needed for the attitude indicator

D. Lubrication to the engine's moving parts

3. A wing always stalls when it exceeds its:

A. Maximum certificated gross weight

B. Critical angle of attack

C. Never-exceed airspeed

D. Best rate-of-climb speed

4. A vacuum system failure typically disables the:

A. Airspeed indicator and altimeter

B. Turn coordinator and magnetic compass

C. Attitude indicator and heading indicator

D. Tachometer and ammeter

5. The three factors that increase density altitude are high elevation, high humidity, and:

A. Low temperature

B. Strong headwinds

C. High temperature

D. Heavy precipitation

6. A high-pressure system generally brings:

A. Rising air and widespread rain

B. Sinking, stable air and fair weather

C. Severe turbulence and windshear

D. Towering cumulus and storms

7. A METAR ceiling is the lowest layer reported as:

A. Few or scattered

B. Clear below 12,000 feet

C. Broken or overcast

D. The first layer on climb

8. Class A airspace, for a Sport Pilot, is:

A. A flat prohibition with no endorsement available

B. Accessible with an instructor endorsement

C. Available only during daytime

D. The normal cross-country airspace

9. The day-VFR fuel reserve requires fuel to the destination plus:

A. 45 minutes at cruise

B. 30 minutes at cruise

C. 1 hour at cruise

D. No reserve

10. The hazardous attitude countered by "Taking chances is foolish" is:

A. Macho

B. Anti-authority

C. Resignation

D. Invulnerability

11. Compliance with an applicable Airworthiness Directive is:

A. Mandatory before the aircraft may be operated

B. Recommended at the owner's discretion

C. Required only for aircraft flown for hire

D. Optional unless the FAA inspects the aircraft

12. Carburetor ice is most likely to form in air that is:

A. Cold and dry below freezing

B. Hot and dry with low humidity

C. Found only in visible precipitation

D. Warm and humid, even above freezing

13. A load factor of 2 G in a 60° banked level turn causes the stall speed to:

A. Decrease

B. Remain unchanged

C. Drop to zero

D. Increase

14. The airspeed indicator is the only pitot-static instrument connected to the:

A. Static port alone

B. Pitot tube

C. Vacuum pump

D. Alternator

15. Useful load equals:

A. Total moment divided by weight

B. Maximum weight minus empty weight

C. Empty weight plus baggage

D. Arm multiplied by weight

16. A small temperature/dewpoint spread indicates a high likelihood of:

A. Clouds, fog, or reduced visibility

B. Clear skies and good visibility

C. Rising barometric pressure

D. Strong, gusty winds

17. On a TAF, "TEMPO" describes conditions that are:

A. Permanent for the rest of the forecast

B. A gradual transition over hours

C. Temporary and intermittent

D. A complete instantaneous change

18. Class D airspace on a sectional is depicted with:

A. Dashed blue lines

B. Solid blue lines

C. Solid magenta lines

D. Dashed magenta lines

19. A true heading of 090° in 6°E variation gives a magnetic heading of:

A. 096°

B. 084°

C. 090°

D. 102°

20. The PAVE checklist's four categories are Pilot, Aircraft, enVironment, and:

A. External pressures

B. Altitude

C. Velocity

D. Endurance

21. The pilot in command is responsible for:

A. Determining the aircraft is safe for flight before each flight

B. Performing the annual inspection personally

C. Issuing the aircraft's airworthiness certificate

D. Filing a report with the FSDO after every flight

22. The rudder controls movement about the:

A. Longitudinal axis (roll)

B. Lateral axis (pitch)

C. Directional axis (bank)

D. Vertical axis (yaw)

23. The single most important stall recovery action is to:

A. Apply full opposite rudder

B. Reduce the angle of attack by lowering the nose

C. Add power and hold the nose up

D. Bank away from the stalled wing

24. Pilotage is navigation by reference to:

A. Computed heading and time

B. A VOR radial

C. GPS position alone

D. Visible landmarks matched to the chart

25. As density altitude increases, takeoff distance and climb rate:

A. Both decrease

B. Both remain unchanged

C. Distance decreases and climb increases

D. Distance increases and climb decreases

26. A cold front typically brings:

A. Gradual layered clouds and steady rain

B. Days of unchanging calm weather

C. A narrow band of intense weather, then clearing

D. Slowly improving visibility over hours

27. Wind direction in a written METAR is referenced to:

A. Magnetic north

B. The runway heading

C. True north

D. The aircraft's compass

28. The standard traffic pattern uses:

A. Right turns at all airports

B. Straight-in approaches only

C. Alternating turns each circuit

D. Left turns unless otherwise indicated

29. The IMSAFE checklist assesses the:

A. Aircraft's weight and balance

B. Airport's traffic pattern

C. METAR observation

D. Pilot's fitness to fly

30. The ARROW acronym lists documents that must be:

A. Carried by the pilot

B. Aboard the aircraft for legal flight

C. Filed with the FAA before each flight

D. Memorized for the knowledge test

31. Engine oil serves to lubricate, cool, seal, clean, and:

A. Ignite the fuel-air mixture

B. Store electrical charge

C. Protect against corrosion

D. Increase fuel octane

32. An aft center of gravity, compared to proper loading:

A. Lowers the stall speed substantially

B. Increases stability and control forces

C. Has no effect on controllability

D. Reduces stability and degrades stall recovery

33. The magnetic compass is accurate only during:

A. Coordinated steep turns

B. Acceleration on easterly headings

C. Climbs and descents

D. Straight-and-level, unaccelerated flight

34. A tailwind affects takeoff and landing distance by:

A. Increasing both distances

B. Decreasing both distances

C. Decreasing takeoff but increasing landing

D. Having no effect

35. On a color-coded chart, green indicates:

A. VFR conditions

B. Marginal VFR

C. IFR conditions

D. Low IFR

36. A Prohibited Area, marked "P," means:

A. Entry is allowed with permission

B. Caution because status is unknown

C. Flight is prohibited entirely

D. Military training requiring caution

37. A VOR should always be confirmed by its:

A. Color on the indicator

B. Position on the GPS map

C. Morse code identifier

D. Frequency in the legend

38. Wingtip vortices (wake turbulence) sink below the flight path and:

A. Rise and dissipate at once

B. Drift with the wind

C. Remain on the centerline

D. Climb into the upper atmosphere

39. To fly at night under MOSAIC privileges, a pilot needs training, an endorsement, and:

A. A valid driver's license alone

B. BasicMed or at least a third class medical

C. A first class medical within six months

D. No medical, as night is now standard

40. The careless or reckless operation rule applies:

A. Only in controlled airspace

B. Only to flights for compensation

C. Only after an accident occurs

D. Broadly, against endangering others' life or property

ANSWER KEY WITH EXPLANATIONS

1. C — One passenger only. The single-passenger limit is absolute, even in a multi-seat aircraft under MOSAIC. No condition or endorsement lifts it.

2. A — Redundancy and a more complete fuel-air burn. The two independent magnetos provide ignition redundancy and a more complete burn by firing two plugs per cylinder. They generate their own spark, independent of the battery.

3. B — Critical angle of attack. A wing always stalls when it exceeds its critical angle of attack, regardless of airspeed or attitude. This is the defining fact of stall awareness.

4. C — Attitude indicator and heading indicator. In many light airplanes these gyroscopic instruments are vacuum-driven, so a vacuum failure disables them while the electric turn coordinator survives. Recognizing this enables partial-panel flight.

5. C — High temperature. High elevation, high humidity, and high temperature all reduce air density and raise density altitude. Each degrades performance.

6. B — Sinking, stable air and fair weather. High pressure features descending, stable air that suppresses clouds and brings fair weather. Lows, with rising air, bring poor weather.

7. C — Broken or overcast. A ceiling is the lowest layer reported as broken or overcast; few and scattered layers do not count. Ceiling and visibility determine VFR legality.

8. A — A flat prohibition with no endorsement available. Sport Pilots are barred from Class A entirely, with no endorsement available—unlike Class B, C, or D. This makes Class A unique.

9. B — 30 minutes at cruise. Day-VFR rules require fuel to reach the destination plus a 30-minute reserve. This applies even to short flights.

10. A — Macho. The macho attitude ("I can do it") is countered by "Taking chances is foolish." Recognizing the thought is the protective step.

11. A — Mandatory before the aircraft may be operated. An applicable AD requires mandatory compliance; an overdue AD renders the aircraft unairworthy. It is never optional or commercial-only.

12. D — Warm and humid, even above freezing. Carburetor ice forms most readily in warm, humid air because the carburetor's internal temperature drop reaches freezing even when outside air is above it. This counterintuitive fact is heavily tested.

13. D — Increase. A 2 G load factor in a 60° bank raises the airspeed at which the wing reaches its critical angle, increasing stall speed. The critical angle itself is unchanged.

14. B — Pitot tube. The airspeed indicator is the only pitot-static instrument connected to the pitot tube, measuring ram versus static pressure. The altimeter and VSI use static pressure only.

15. B — Maximum weight minus empty weight. Useful load is the maximum weight minus the empty weight, representing capacity for occupants, fuel, and baggage. It is not a moment or arm calculation.

16. A — Clouds, fog, or reduced visibility. A small temperature/dewpoint spread means the air is near saturation, making clouds and fog likely. As the spread nears zero, visible moisture forms.

17. C — Temporary and intermittent. TEMPO marks brief, come-and-go conditions lasting under an hour at a time within a stated window. Permanent and gradual changes use FM and BECMG.

18. A — Dashed blue lines. Class D is depicted with dashed blue lines on a sectional. Class B is solid blue, Class C solid magenta, and Class E surface dashed magenta.

19. B — 084°. With 6°E variation, magnetic heading is 090 − 6 = 084° ("east is least"). Easterly variation is subtracted.

20. A — External pressures. PAVE identifies risk across Pilot, Aircraft, enVironment, and External pressures. It builds a complete risk picture.

21. A — Determining the aircraft is safe for flight before each flight. The PIC is responsible for determining the aircraft is in condition for safe flight before each flight; the owner/operator maintains airworthiness. Both responsibilities coexist.

22. D — Vertical axis (yaw). The rudder controls yaw about the vertical axis. Ailerons control roll and the elevator controls pitch.

23. B — Reduce the angle of attack by lowering the nose. Every stall is cured by reducing the angle of attack, accomplished by lowering the nose. Pulling back deepens the stall.

24. D — Visible landmarks matched to the chart. Pilotage navigates by visible ground features matched to the chart. Computation is dead reckoning; VOR and GPS are electronic methods.

25. D — Distance increases and climb decreases. Higher density altitude lengthens takeoff distance and reduces climb rate by thinning the air. Takeoff is the most dangerous phase.

26. C — A narrow band of intense weather, then clearing. A cold front brings brief but violent weather followed by clearing and improving visibility. A warm front brings widespread, prolonged poor weather.

27. C — True north. Written products (METAR/TAF) reference wind to true north, while spoken tower/ATIS winds are magnetic. Confusing the two introduces error.

28. D — Left turns unless otherwise indicated. The standard traffic pattern uses left turns; right traffic is flown only where charted. This keeps pattern operations predictable.

29. D — Pilot's fitness to fly. IMSAFE (Illness, Medication, Stress, Alcohol, Fatigue, Eating/Emotion) is the pilot's pre-flight fitness self-check. It is the "Pilot" element of PAVE.

30. B — Aboard the aircraft for legal flight. ARROW lists the documents that must be aboard the aircraft: Airworthiness, Registration, Radio license (international), Operating limitations, and Weight and balance. They are not pilot-carried or pre-filed.

31. C — Protect against corrosion. Engine oil lubricates, cools, seals, cleans, and protects against corrosion, performing all five functions at once. Loss of oil pressure threatens all of them.

32. D — Reduces stability and degrades stall recovery. An aft CG reduces longitudinal stability and worsens stall recovery, making it the more dangerous extreme. A forward CG increases stability and control forces.

33. D — Straight-and-level, unaccelerated flight. The compass is reliable only in straight, level, unaccelerated flight; turns and accelerations induce errors. This is why the heading indicator is reset only under those conditions.

34. A — Increasing both distances. A tailwind raises the groundspeed needed to fly and to stop, lengthening both takeoff and landing. Pilots operate into the wind to avoid this.

35. A — VFR conditions. Green marks VFR—ceiling above 3,000 feet and visibility above 5 miles—which is what a day-VFR pilot seeks. Blue is MVFR, red IFR, magenta LIFR.

36. C — Flight is prohibited entirely. A Prohibited Area ("P") bars flight entirely for security or national welfare. Restricted and Warning areas have different, less absolute rules.

37. C — Morse code identifier. A VOR must be confirmed by its Morse code identifier before use; an absent or wrong identifier means it is unreliable. Color and frequency alone do not verify it.

38. B — Drift with the wind. Wingtip vortices sink below the flight path and drift with the wind, which is why a following pilot stays above and upwind. They do not rise or remain fixed.

39. B — BasicMed or at least a third class medical. MOSAIC night flight requires BasicMed or a third class medical, plus training and an endorsement; the driver's-license provision is insufficient. Night is not a standard Sport Pilot privilege.

40. D — Broadly, against endangering others' life or property. The careless-or-reckless rule is a broad catch-all prohibiting operation that endangers others, regardless of airspace, purpose, or whether an accident occurred. It is the FAA's general safety net.