PRACTICE EXAM 11

1. A Sport Pilot may carry how many passengers, regardless of the aircraft's seating?

A. As many as the aircraft has approved seats

B. Two passengers in a four-seat aircraft

C. One passenger only

D. No passengers under any circumstances

2. The dual ignition system fires each cylinder with:

A. Two spark plugs from two independent magnetos

B. A single spark plug powered by the battery

C. One magneto shared across all cylinders

D. The alternator's direct electrical output

3. A wing stalls when it exceeds its:

A. Never-exceed airspeed marked in red

B. Critical angle of attack

C. Best rate-of-climb speed

D. Maximum certificated gross weight

4. The attitude indicator relies on which gyroscopic property?

A. Magnetic dip near the poles

B. Precession acting 90 degrees later

C. Rigidity in space

D. The Bernoulli pressure difference

5. The "three H's" that raise density altitude are:

A. Heavy, hazy, and humid

B. Heat, height, and headwind

C. High, hot, and humid

D. High, heavy, and hot

6. A high-pressure system is generally associated with:

A. Rising air and widespread precipitation

B. Severe turbulence and frequent windshear

C. Towering cumulus and thunderstorms

D. Sinking, stable air and fair weather

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

A. Few or scattered clouds

B. Broken or overcast

C. Clear of clouds below 12,000 feet

D. The first layer encountered on climb

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

A. Accessible with an instructor endorsement

B. A flat prohibition with no endorsement available

C. Available only during daytime flights

D. The standard airspace for cross-country flight

9. The day-VFR fuel reserve requirement is enough fuel to reach the destination plus:

A. 30 minutes at normal cruise

B. 45 minutes at normal cruise

C. 1 hour at normal cruise

D. No reserve is required

10. The hazardous attitude "It won't happen to me" is:

A. Anti-authority

B. Macho

C. Resignation

D. Invulnerability

11. Compliance with an applicable Airworthiness Directive is:

A. Optional unless the FAA inspects the aircraft

B. Recommended at the owner's discretion

C. Required only for commercial operations

D. Mandatory before the aircraft may be operated

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

A. Cold and dry, well below freezing

B. Hot and dry with very low humidity

C. Warm and humid, even above freezing

D. Found only in visible precipitation aloft

13. Load factor at a 60-degree bank in a coordinated level turn is approximately:

A. 1.0 G

B. 1.15 G

C. 1.41 G

D. 2.0 G

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

A. Static port alone

B. Vacuum pump

C. Alternator output

D. Pitot tube

15. Useful load is correctly calculated as:

A. Maximum weight minus empty weight

B. Total moment divided by total weight

C. Empty weight plus the fuel load

D. The arm multiplied by the weight

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

A. Clear skies and excellent visibility

B. A rapid rise in atmospheric pressure

C. Clouds, fog, or reduced visibility

D. Strong, gusty surface winds

17. In a TAF, the change indicator "TEMPO" describes conditions that are:

A. A permanent change for the rest of the forecast

B. A gradual transition over several hours

C. A complete instantaneous replacement of conditions

D. Temporary, expected to last under an hour at a time

18. On a sectional chart, Class D airspace is depicted with:

A. Solid blue lines

B. Solid magenta lines

C. Dashed magenta lines

D. Dashed blue lines

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

A. 096°

B. 084°

C. 090°

D. 102°

20. The PAVE checklist's four risk categories are:

A. Pilot, Aircraft, enVironment, External pressures

B. Power, Altitude, Velocity, Endurance

C. Position, Approach, Visibility, Emergency

D. Preflight, Avionics, Voltage, Engine

21. Who is directly responsible for determining an aircraft is in condition for safe flight before each flight?

A. The mechanic who performed the last inspection

B. The pilot in command

C. The registered owner of record

D. The local Flight Standards District Office

22. The rudder controls movement about which axis?

A. The longitudinal axis, producing roll

B. The lateral axis, producing pitch

C. The directional axis, producing bank

D. The vertical axis, producing yaw

23. The single most important action to recover from any stall is to:

A. Apply full opposite rudder immediately

B. Pull back to stop the descent

C. Add full power and hold the nose up

D. Reduce the angle of attack by lowering the nose

24. A vacuum system failure most directly affects which instruments?

A. The airspeed indicator and altimeter

B. The attitude indicator and heading indicator

C. The tachometer and ammeter

D. The turn coordinator and magnetic compass

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

A. Distance increases and climb rate decreases

B. Distance decreases and climb rate increases

C. Both increase together

D. Both remain unchanged

26. A cold front is typically associated with:

A. A narrow band of intense weather, then rapid clearing

B. Widespread layered clouds and steady rain over a large area

C. Prolonged, unchanging weather along a stationary boundary

D. Clear skies persisting for several days

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

A. The magnetic north used by control towers

B. True north

C. The runway heading at the airport

D. The aircraft's compass heading

28. The standard traffic pattern uses:

A. Left turns unless otherwise indicated

B. Right turns at all airports

C. Straight-in approaches only

D. Alternating turns each circuit

29. Pilotage is navigation by reference to:

A. Visible landmarks matched to the chart

B. Computed heading, airspeed, and time

C. A VOR radial to or from a station

D. Satellite GPS position data alone

30. The IMSAFE checklist is used to:

A. Compute the aircraft's center of gravity

B. Decode a terminal aerodrome forecast

C. Self-assess the pilot's fitness to fly

D. Determine the airport's pattern direction

31. The acronym ARROW lists:

A. The documents that must be aboard a civil aircraft

B. The five hazardous attitudes

C. The four-stroke engine cycle

D. The steps of the ADM process

32. Engine oil in a reciprocating engine serves to:

A. Provide the spark to ignite the mixture

B. Lubricate, cool, seal, clean, and protect

C. Increase the octane rating of the fuel

D. Store electrical charge for starting

33. An aft center of gravity, compared to a properly loaded airplane, is more hazardous because it:

A. Lowers the stall speed substantially

B. Reduces stability and degrades stall recovery

C. Increases elevator forces and stability

D. Has no effect on controllability

34. The magnetic compass is accurate only during:

A. Coordinated steep turns at constant speed

B. Rapid acceleration on an easterly heading

C. Straight-and-level, unaccelerated flight

D. Climbs and descents at varying airspeed

35. A tailwind affects takeoff and landing distance by:

A. Decreasing both distances

B. Having no effect on either

C. Decreasing takeoff but increasing landing

D. Increasing both distances

36. On a color-coded weather chart, green indicates:

A. IFR conditions

B. Marginal VFR conditions

C. VFR conditions

D. Low IFR conditions

37. A Prohibited Area on a chart, marked with a "P," means:

A. Flight is prohibited entirely

B. Entry is allowed with permission when inactive

C. Caution is advised because status is unknown

D. Military training requiring extreme caution

38. A VOR should always be confirmed by its:

A. Color on the cockpit indicator

B. Position on the GPS moving map

C. Morse code identifier

D. Listed frequency in the legend

39. Wingtip vortices (wake turbulence) sink and:

A. Rise above the flight path and dissipate at once

B. Remain stationary on the runway centerline

C. Drift with the wind

D. Climb steadily into the upper atmosphere

40. A pilot must hold which medical eligibility to fly at night under MOSAIC privileges?

A. A valid U.S. driver's license alone

B. BasicMed or at least a third class medical certificate

C. A first class medical within the past six months

D. No medical, since night is a standard privilege

ANSWER KEY WITH EXPLANATIONS

1. C — One passenger only. The single-passenger limit is absolute for Sport Pilots, even in a four-seat aircraft under MOSAIC. No training or endorsement removes it.

2. A — Two spark plugs from two independent magnetos. Dual ignition fires each cylinder with two plugs from two independent, engine-driven magnetos, providing redundancy and a more complete burn. The magnetos need no battery to operate.

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 — Rigidity in space. The attitude indicator uses a gyro's rigidity in space to hold a stable horizon reference. Precession, by contrast, drives the turn coordinator.

5. C — High, hot, and humid. The three H's—high elevation, hot temperature, and high humidity—all reduce air density and raise density altitude. Each degrades performance.

6. D — 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. B — 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. B — 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. A — 30 minutes at normal cruise. Day-VFR rules require fuel to reach the destination plus a 30-minute reserve. This is a frequent computation and recall point.

10. D — Invulnerability. "It won't happen to me" is the invulnerability attitude, countered by "It could happen to me." Recognizing it is the protective step.

11. D — Mandatory before the aircraft may be operated. An applicable Airworthiness Directive requires mandatory compliance; an overdue AD renders the aircraft unairworthy. It is never optional or discretionary.

12. C — 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 — 2.0 G. A 60-degree bank in a coordinated level turn produces a load factor of 2 G, doubling the effective weight and raising stall speed. Load factor climbs steeply beyond 60 degrees.

14. D — 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. A — Maximum weight minus empty weight. Useful load is the maximum weight minus the empty weight, representing what is available for occupants, fuel, and baggage. It is not a moment or an arm calculation.

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

18. D — 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"). Applying the rule in reverse is a common error.

20. A — Pilot, Aircraft, enVironment, External pressures. PAVE identifies risk across these four categories before and during a flight. It builds a complete risk picture.

21. B — The pilot in command. The PIC is responsible for determining the aircraft is in condition for safe flight before each flight; the owner/operator maintains airworthiness. Both responsibilities exist at once.

22. D — The vertical axis, producing yaw. The rudder controls yaw about the vertical axis. Ailerons control roll and the elevator controls pitch.

23. D — 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. B — The 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.

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

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

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

28. A — 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. A — 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.

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

31. A — The documents that must be aboard a civil aircraft. ARROW lists Airworthiness certificate, Registration, Radio station license (international), Operating limitations, and Weight and balance data. It is the standard documents memory aid.

32. B — Lubricate, cool, seal, clean, and protect. Engine oil performs all five functions simultaneously. Loss of oil pressure threatens all of them and can precede seizure.

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

34. C — 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.

35. D — 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.

36. C — 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.

37. A — 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.

38. 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.

39. C — 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.

40. B — BasicMed or at least a third class medical certificate. MOSAIC's night privilege 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.