PRACTICE EXAM 26

1. A Sport Pilot operating a four-seat aircraft under MOSAIC may carry:

A. Three passengers in daytime VFR

B. Two passengers if expenses are shared

C. Passengers up to the number of seats

D. One passenger only

2. The primary purpose of the dual magneto ignition system is to:

A. Charge the aircraft battery in flight

B. Provide redundancy and a more complete burn

C. Power the attitude indicator's gyro

D. Lubricate the engine's cylinders

3. A wing exceeding its critical angle of attack will:

A. Stall regardless of airspeed or attitude

B. Continue producing maximum lift

C. Stall only at low airspeed

D. Be protected by the never-exceed speed

4. A vacuum pump failure most directly affects the:

A. Attitude indicator and heading indicator

B. Airspeed indicator and altimeter

C. Turn coordinator and ammeter

D. Tachometer and magnetic compass

5. Density altitude rises with high elevation, high humidity, and:

A. Low temperature

B. Strong winds

C. High temperature

D. Heavy rain

6. A small, falling temperature/dewpoint spread most strongly suggests:

A. Fog or low clouds forming

B. Clearing skies and good visibility

C. A rapid rise in pressure

D. Strong, gusty winds

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

A. Few or scattered

B. Broken or overcast

C. Clear below 12,000 feet

D. The first layer on climb

8. A Sport Pilot may enter Class C airspace with:

A. A first class medical certificate

B. A commercial certificate

C. The appropriate instructor endorsement

D. A one-time tower waiver

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 "It won't happen to me" is:

A. Anti-authority

B. Invulnerability

C. Resignation

D. Impulsivity

11. A true heading of 270° in 10°W variation gives a magnetic heading of:

A. 260°

B. 270°

C. 250°

D. 280°

12. Carburetor ice forms most readily 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. Useful load equals:

A. Maximum weight minus empty weight

B. Total moment divided by weight

C. Empty weight plus the fuel

D. Arm multiplied by weight

14. A 60° banked level turn produces a load factor of about:

A. 1.0 G

B. 1.15 G

C. 1.41 G

D. 2.0 G

15. Class B airspace on a sectional is depicted with:

A. Dashed magenta lines

B. Dashed blue lines

C. Solid blue lines

D. Solid magenta lines

16. The single most important stall-recovery action is to:

A. Reduce the angle of attack by lowering the nose

B. Apply full opposite rudder

C. Add power and hold the nose up

D. Bank away from the stall

17. A leg of 120 NM at a groundspeed of 80 knots takes:

A. 60 minutes

B. 45 minutes

C. 90 minutes

D. 120 minutes

18. The IMSAFE checklist is used to:

A. Compute weight and balance

B. Decode a TAF

C. Determine the pattern direction

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

19. A high-pressure system generally brings:

A. Rising air and widespread rain

B. Severe turbulence and shear

C. Towering cumulus and storms

D. Sinking, stable air and fair weather

20. Compliance with an applicable Airworthiness Directive is:

A. Optional at the owner's discretion

B. Mandatory before operating the aircraft

C. Required only for aircraft flown for hire

D. Recommended but not required

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

A. True north

B. Magnetic north

C. The runway heading

D. The aircraft's compass

22. The rudder controls movement about the:

A. Longitudinal axis (roll)

B. Vertical axis (yaw)

C. Lateral axis (pitch)

D. Directional axis (bank)

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

A. Both decrease

B. Both remain unchanged

C. Distance increases and climb decreases

D. Distance decreases and climb increases

24. Pilotage is navigation by reference to:

A. Visible landmarks matched to the chart

B. Computed heading and time

C. A VOR radial

D. GPS position alone

25. A cold front typically brings:

A. Gradual layered clouds and steady rain

B. Days of unchanging weather

C. A narrow band of intense weather, then clearing

D. Slowly improving visibility over hours

26. The PAVE checklist's four risk categories are Pilot, Aircraft, External pressures, and:

A. Altitude

B. enVironment

C. Velocity

D. Endurance

27. The standard traffic pattern uses:

A. Right turns at all airports

B. Straight-in approaches only

C. Left turns unless otherwise indicated

D. Alternating turns each circuit

28. A VOR must always be confirmed before use by its:

A. Color on the indicator

B. Position on the GPS map

C. Frequency in the legend

D. Morse code identifier

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

A. Clear skies and good visibility

B. Rising barometric pressure

C. Clouds, fog, or reduced visibility

D. Strong, gusty winds

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

A. Static port alone

B. Pitot tube

C. Vacuum pump

D. Alternator

31. 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

32. The ARROW acronym lists documents that must be:

A. Carried by the pilot

B. Filed with the FAA before flight

C. Aboard the aircraft for legal flight

D. Memorized for the knowledge test

33. Microburst windshear on short final is best handled by:

A. Reducing power to land sooner

B. Maintaining the approach and accepting the sink

C. Applying maximum power and going around

D. Lowering the nose to increase descent

34. The magnetic compass is accurate only during:

A. Coordinated steep turns

B. Straight-and-level, unaccelerated flight

C. Climbs and descents

D. Acceleration on easterly headings

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

A. VFR conditions

B. Marginal VFR

C. IFR conditions

D. Low IFR

36. A pilot who recognizes a hazardous attitude in himself is:

A. Practicing the self-awareness central to good ADM

B. Unusually unfit to hold a certificate

C. Guaranteed to make a poor decision

D. Demonstrating the framework does not apply

37. A tailwind affects takeoff and landing distance by:

A. Decreasing both distances

B. Having no effect

C. Decreasing takeoff but increasing landing

D. Increasing both distances

38. Engine oil lubricates, cools, seals, cleans, and:

A. Ignites the fuel-air mixture

B. Stores electrical charge

C. Raises the fuel octane

D. Protects against corrosion

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

A. A 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. Broadly, against endangering others' life or property

B. Only in controlled airspace

C. Only to flights for compensation

D. Only after an accident occurs

ANSWER KEY WITH EXPLANATIONS

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

2. B — Provide redundancy and a more complete burn. The dual magneto system gives ignition redundancy and a more complete fuel-air burn by firing two plugs per cylinder. The magnetos generate their own spark, independent of the battery.

3. A — Stall regardless of airspeed or attitude. 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. A — Attitude indicator and heading indicator. A vacuum failure disables the vacuum-driven attitude and heading indicators 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. A — Fog or low clouds forming. A small, falling temperature/dewpoint spread signals air nearing saturation, so fog or low clouds are likely. This warns of reduced visibility.

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. C — The appropriate instructor endorsement. A Sport Pilot needs the appropriate airspace endorsement to enter Class C; no medical upgrade, commercial certificate, or waiver substitutes. The endorsement must be obtained first.

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. B — 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 — 280°. With 10°W variation, magnetic heading is 270 + 10 = 280° ("west is best"). Westerly variation is added to true heading.

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. A — 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.

14. D — 2.0 G. A 60° 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°.

15. C — Solid blue lines. Class B airspace boundaries are depicted with solid blue lines. Class C is solid magenta, Class D dashed blue, and Class E surface dashed magenta.

16. A — 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.

17. C — 90 minutes. Time equals distance divided by groundspeed: 120 ÷ 80 = 1.5 hr = 90 minutes. Groundspeed drives trip time.

18. D — Self-assess the 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.

19. 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.

20. B — Mandatory before operating the aircraft. An applicable AD requires mandatory compliance; an overdue AD renders the aircraft unairworthy. It is never optional or commercial-only.

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

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

23. C — 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.

24. 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.

25. 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.

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

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

28. D — 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.

29. 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.

30. 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.

31. 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.

32. C — 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.

33. C — Applying maximum power and going around. A microburst on short final calls for maximum power and an immediate go-around, since the shear can exceed the airplane's capability. Reducing power or accepting the sink is dangerous.

34. B — 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. 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. A — Practicing the self-awareness central to good ADM. Recognizing one's own hazardous attitudes is the self-awareness at the heart of ADM; every pilot has these tendencies. The dangerous pilot is the one who does not recognize them.

37. 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.

38. D — Protects 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.

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. A — 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.