

Exam simulation

FAA Part 107 Drone Quiz - Weather



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STUDENT NAME:

DATE AND TIME:

01. What is the primary danger to a drone pilot when flying in an area with a strong temperature inversion?

- a) The battery will overheat due to the rapidly rising air.
- b) The drone will be pushed uncontrollably upward into controlled airspace.
- c) Poor visibility due to trapped smoke, dust, and haze in the lower atmosphere, making VLOS difficult.

02. What are the four forces that act on an aircraft in flight?

- a) Lift, weight, thrust, and drag.
- b) Lift, gravity, power, and friction.
- c) Lift, weight, speed, and drag.

03. While monitoring the Cooperstown CTAF you hear an aircraft announce that they are midfield left downwind to RWY 13. Where would the aircraft be relative to the runway?



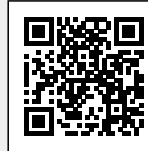
- a) The aircraft is East.
- b) The aircraft is South.
- c) The aircraft is West.

04. What is a characteristic of stable air?

- a) Unlimited visibility.
- b) Stratiform clouds.
- c) Cumulus clouds.

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05. How are the weather conditions at Los Angeles International Airport (KLAX) best described?

METAR KINK 121845Z 11012G18KT 15SM SKC 25/17 A3000

METAR KBOI 121854Z 13004KT 30SM SCT150 17/6 A3015

METAR KLAX 121852Z 25004KT 6SM BR SCT007 SCT250 16/15 A2

SPECI KMDW 121856Z 32005KT 1 1/2SM RA OVC007 17/16 A2980

SPECI KJFK 121853Z 18004KT 1/2SM FG R04/2200 OVC005 20/18 A

- a) Visibility of 16 statute miles, wind speed of 5 knots.
- b) Scattered clouds at 700 feet, temperature of 16 °C.
- c) Wind coming from NE, visibility obscured by fog.

06. What is the primary function of a Common Traffic Advisory Frequency (CTAF)?

- a) To request ATC clearance into Class B airspace.
- b) For pilots to self-announce their positions and intentions at uncontrolled airports.
- c) To receive automated weather broadcasts.

07. What is the effect on the propeller efficiency of low density altitude?

- a) Propeller efficiency is increased.
- b) There is no effect on propeller efficiency.
- c) Propeller efficiency is decreased.

08. Why should a remote pilot avoid storing LiPo batteries fully charged for extended periods (e.g., several weeks)?

- a) The battery will become too cold.
- b) The battery will permanently lock and cannot be used again.
- c) It degrades the battery's chemical structure, leading to swelling (puffing) and reduced lifespan.

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09. According to 14 CFR Part 107, what is the maximum blood alcohol concentration (BAC) allowable to operate an sUAS?

- a) 0.04 percent.
- b) 0.08 percent.
- c) 0.00 percent.

10. The acronym IMSAFE is a personal checklist designed to help pilots:

- a) Determine if the aircraft is airworthy.
- b) Assess their own physical and mental fitness for flight.
- c) Review emergency procedures before takeoff.

11. Low-level turbulence can occur and icing can become hazardous in which type of fog?

- a) Upslope fog.
- b) Steam fog.
- c) Rain-induced fog.

12. What does the abbreviation 'CB' mean when appended to a cloud layer in a METAR?

- a) Cumulonimbus.
- b) Clear below.
- c) Cirrostratus broken.

13. What increases the load factor on a fixed wing airplane?

- a) Power off stall.
- b) Level turn.
- c) Steady state climb.

14. Thunderstorms require three elements to form: high moisture, an unstable lapse rate (instability), and:

- a) High barometric pressure.
- b) A lifting force (such as heating from below or a frontal boundary).
- c) A strong temperature inversion.

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15. When an aircraft's center of gravity is located forward of the forward CG limit, the aircraft:

- a) Is highly unstable and difficult to control.
- b) Will stall at a lower airspeed.
- c) Will be highly stable, but will require more elevator pressure to raise the nose, decreasing performance.

16. What condition is necessary for structural icing to occur in flight?

- a) Clear skies and a temperature inversion.
- b) Flight through cirrus clouds.
- c) The aircraft must be flying through visible moisture (like rain or clouds) and the temperature must be at or below freezing.

17. You are operating a drone weighing 4 pounds. It accidentally hits a person on a bicycle, causing a concussion and requiring them to stay overnight in the hospital. Must you report this?

- a) Yes, because it resulted in a serious injury.
- b) No, because the drone weighs less than 5 pounds.
- c) No, only property damage is reported.

18. If you see a faded magenta band on a sectional chart, what does it indicate about the Class E airspace?

- a) Class E airspace begins at the surface.
- b) Class E airspace begins at 700 feet AGL.
- c) Class E airspace begins at 1,200 feet AGL.

19. What is the antidote when a pilot has a hazardous attitude, such as "Invulnerability"?

- a) It will not happen to me.
- b) It can not be that bad.
- c) It could happen to me.

20. Why are surface winds generally slower and cross the isobars at an angle compared to winds aloft?

- a) Because of surface friction from terrain, trees, and buildings.
- b) Because the Coriolis force is stronger at the surface.
- c) Because the air is warmer at the surface.

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21. Is it legal to fly an sUAS while riding as a passenger in a moving automobile?

- a) Yes, under all circumstances.
- b) Yes, but only over sparsely populated areas.
- c) No, it is strictly prohibited.

22. A National Security Area (NSA) is depicted by a thick, dashed magenta line. What are the rules for flying an sUAS in an NSA?

- a) Pilots are requested to voluntarily avoid flying through the NSA, but it may be temporarily prohibited by a NOTAM.
- b) Flight is permanently prohibited under all circumstances.
- c) Authorization must be requested via LAANC.

23. When flying near a large body of water during the day, how does the wind typically blow?

- a) From the cooler water toward the warmer land (Sea Breeze).
- b) From the warmer land toward the cooler water (Land Breeze).
- c) Parallel to the shoreline at all times.

24. Which type of weather briefing is provided when the information requested is 6 or more hours in advance of the proposed departure time?

- a) An Outlook briefing.
- b) A Standard briefing.
- c) An Abbreviated briefing.

25. Which of the following is a key element of effective Crew Resource Management (CRM)?

- a) Clear communication and encouraging team members to speak up about safety concerns.
- b) The Remote PIC making all decisions without consulting the crew.
- c) Relying entirely on the automated systems of the drone.

26. Do you need ATC authorization to fly your sUAS in Class G airspace?

- a) No, prior authorization is not required.
- b) Yes, if flying within 5 miles of an airport.
- c) Yes, ATC authorization is always required.

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27. When flying at night, what is the best technique for spotting other aircraft?

- a) Look directly at the object you are trying to see.
- b) Use off-center viewing by looking 5 to 10 degrees to the side of the object.
- c) Scan the sky rapidly without stopping.

28. If your sUAS experiences a flyaway and is heading toward controlled airspace, what should you do?

- a) Wait to see if it returns automatically.
- b) Report it to the FAA within 10 days.
- c) Immediately notify the appropriate ATC facility to advise them of the emergency and the drone's last known location and heading.

29. Humidity affects density altitude because:

- a) Water vapor is lighter than dry air, making moist air less dense and thereby increasing the density altitude.
- b) Water vapor is heavier than dry air, making moist air more dense and thereby decreasing density altitude.
- c) Humidity physically coats the propellers with water, adding weight.

30. In meteorology, what is a 'front'?

- a) The center of a high-pressure system.
- b) The boundary layer between two distinct air masses of different temperatures and densities.
- c) The leading edge of a microburst.

31. What is the antidote for the hazardous attitude of 'Anti-Authority'?

- a) It could happen to me.
- b) Follow the rules. They are usually right.
- c) Not so fast. Think first.

32. What is the antidote for the hazardous attitude of 'Macho'?

- a) Taking chances is foolish.
- b) I am not helpless. I can make a difference.
- c) It could happen to me.

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33. What does a SIGMET (Significant Meteorological Information) advise pilots about?

- a) Non-convective weather that is potentially hazardous to all aircraft, such as severe icing, severe turbulence, or dust storms.
- b) Weather conditions that are only hazardous to small, single-engine aircraft.
- c) Routine forecasted weather at an aerodrome.

34. A pilot should be able to overcome the symptoms or avoid future occurrences of hyperventilation by

- a) increasing the breathing rate in order to increase lung ventilation.
- b) slowing the breathing rate, breathing into a bag, or talking aloud.
- c) closely monitoring the flight instruments to control the airplane.

35. When a pilot feels that they have no control over their situation and leaves the action to others, they are exhibiting which hazardous attitude?

- a) Impulsivity.
- b) Invulnerability.
- c) Resignation.

36. Standard sea level temperature is:

- a) 15°C (59°F).
- b) 10°C (50°F).
- c) 20°C (68°F).

37. Fog that forms when cold, dry air moves over relatively warm water is called:

- a) Radiation fog.
- b) Upslope fog.
- c) Steam fog.

38. You have received a job to survey an area that happens to fall within Class C airspace. Which of the following must you do before starting the operations?

- a) Submit a plan for risks and mitigating measures to the FAA.
- b) Contact the relevant air traffic control (ATC) facility.
- c) Request for airspace authorization via LAANC or the FAA DroneZone.

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39. If a small UAS does not have a manufacturer's published weight and balance manual, what should the remote PIC do?

- a) Develop their own process or use industry best practices to ensure the aircraft is safely loaded and balanced.
- b) Assume the aircraft can carry any payload as long as it takes off.
- c) The remote PIC is prohibited from flying the aircraft without a published manual.

40. If an unmanned aircraft weighs 30 pounds, what approximate weight would the structure be required to support during a 60-degree banked turn while maintaining altitude?

- a) 30 pounds.
- b) 60 pounds.
- c) 45 pounds.

41. When flying a drone at a construction site, what is a specific operational hazard you should brief your crew about?

- a) Magnetic interference from heavy machinery, cranes, and shifting obstacles.
- b) Sudden drops in density altitude.
- c) Birds nesting in the area.

42. Which combination of factors will result in the lowest density altitude (and therefore the best performance)?

- a) High temperature, high elevation, high humidity.
- b) Low temperature, low elevation, low humidity.
- c) High temperature, low elevation, high humidity.

43. Which aircraft has the right-of-way over all other air traffic?

- a) An aircraft in distress.
- b) A commercial airliner.
- c) A military jet.

44. How should you pronounce the number '9' over aviation radios?

- a) Nine.
- b) Nino.
- c) Niner.

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45. Federal Airways (Victor Airways) are generally Class E airspace. What are the vertical limits of a Federal Airway?

- a) From the surface to 10,000 feet MSL.
- b) 1,200 feet AGL up to, but not including, 18,000 feet MSL.
- c) 700 feet AGL up to 14,500 feet MSL.

46. During which stage of a thunderstorm is the most severe weather, such as heavy rain, wind shear, and hail, generally encountered?

- a) The mature stage.
- b) The cumulus stage.
- c) The dissipating stage.

47. You are checking LAANC for authorization to fly in Class C airspace. The grid you want to fly in shows a '0'. What does this mean?

- a) Auto-approval is not available; you must apply for further coordination via DroneZone or a LAANC USS.
- b) Flight is strictly prohibited and no authorization will ever be granted.
- c) You can fly up to 400 feet, as the 0 means no manned aircraft are present.

48. You are hired to film a major league baseball game at a stadium seating 35,000 people. Are you allowed to fly your drone over the stadium during the game?

- a) Yes, as long as you stay 400 feet above the stadium.
- b) No, a stadium TFR prohibits flights starting 1 hour before the event until 1 hour after.
- c) Yes, if you obtain written permission from the stadium manager.

49. If your drone crashes into a person and causes a laceration that requires stitches, when must you report it to the FAA?

- a) Within 10 calendar days, because it is a serious injury.
- b) Within 30 calendar days.
- c) No report is required if the person does not press charges.

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50. The distance an aircraft travels over the ground is affected by the wind. If your drone flies at 30 knots indicated airspeed into a 10-knot headwind, what is the approximate ground speed?

- a) 20 knots.
- b) 30 knots.
- c) 40 knots.

51. Every physical process of weather is accompanied by, or is the result of, a:

- a) Movement of air.
- b) Heat exchange.
- c) Pressure differential.

52. Wind directions broadcasted over an AWOS, ASOS, or ATIS frequency are given in reference to:

- a) True North.
- b) Magnetic North.
- c) Grid North.

53. When strapping a new, heavy camera to your drone, how should you position it in relation to the aircraft's Center of Gravity (CG)?

- a) As far forward as possible to prevent flipping backward.
- b) As close to the original Center of Gravity as possible to maintain balance.
- c) As far aft as possible.

54. Under what condition can you operate a drone in a Restricted Area?

- a) It is never allowed under any circumstances.
- b) If you have permission from the controlling agency.
- c) If you are flying purely for recreational purposes.

55. The Coriolis force is created by:

- a) The unequal heating of the Earth's surface.
- b) The rotation of the Earth.
- c) The gravitational pull of the moon.

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56. What type of weather is generally associated with a warm front?

- a) Severe thunderstorms and tornadoes.
- b) Stratiform clouds, steady precipitation, and poor visibility ahead of the front.
- c) Rapidly dropping temperatures and clear skies.

57. In a TAF, what does 'PROB30' mean?

- a) Visibility will be limited to 30 miles.
- b) There is a 30 percent probability of the forecasted weather conditions occurring.
- c) Winds will increase by 30 knots.

58. A temperature inversion would most likely result in which weather condition?

- a) Clouds with extensive vertical development above an inversion aloft.
- b) Good visibility in the lower levels of the atmosphere and poor visibility above an inversion aloft.
- c) An increase in temperature as altitude is increased.

59. If you see '+SN' in a METAR, what weather condition is occurring?

- a) Light snow.
- b) Blowing snow.
- c) Heavy snow.

60. You are hired to inspect a cell tower located in Class G airspace. The tower is 500 feet tall. Can you legally fly above the tower?

- a) No, you can never fly above 400 feet AGL.
- b) Yes, you can fly up to 900 feet AGL (400 feet above the top of the 500-foot tower) while remaining within a 400-foot radius of the tower.
- c) Yes, but you need ATC authorization because you are above 400 feet.

61. What is the ceiling of controlled airspace at Collin Co Rgnl McKinney (TKI)?

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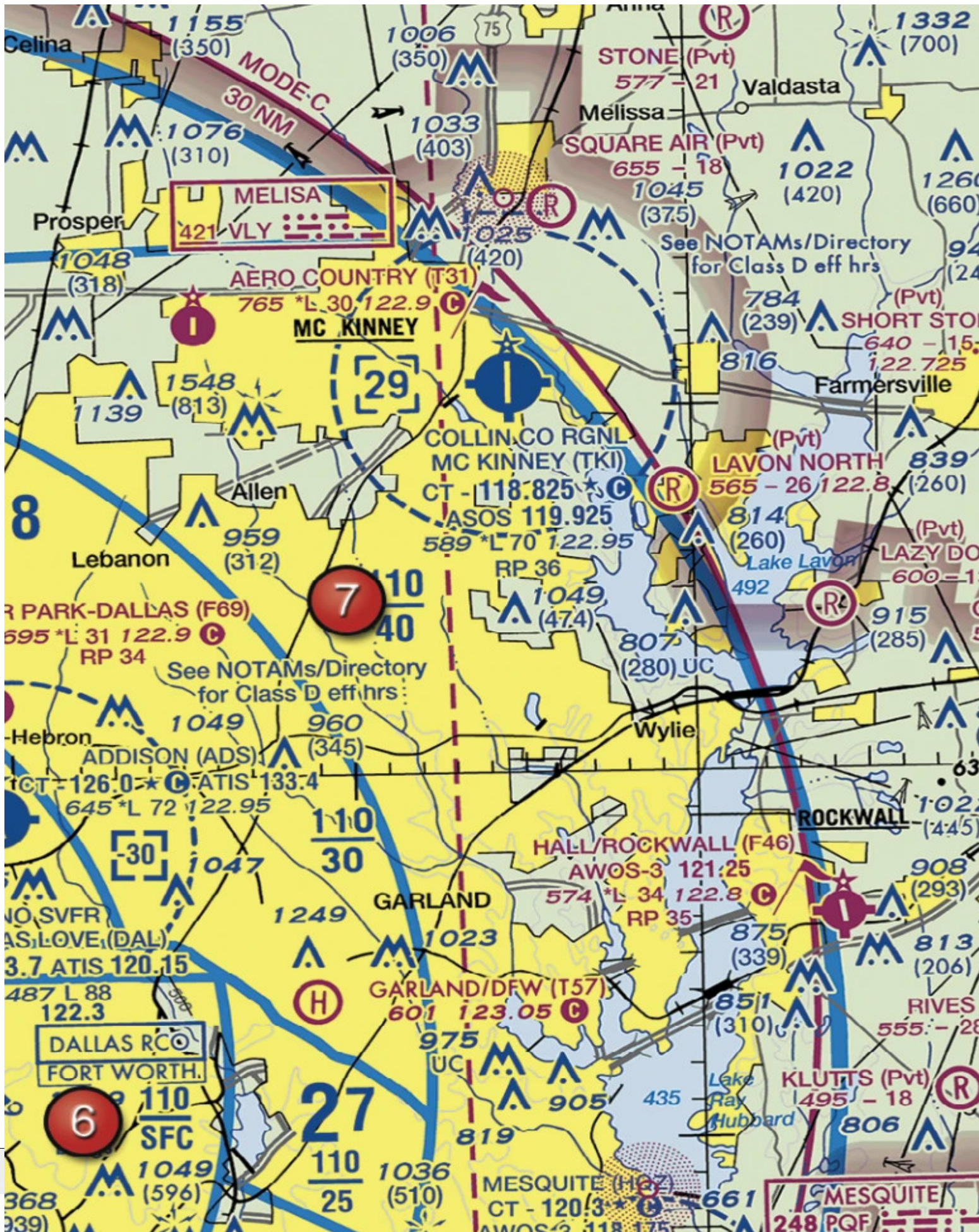
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- a) 2,900' MSL.
- b) 2,311' MSL.
- c) 2,900' AGL.

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62. During a preflight inspection, you notice a small crack in one of the drone's propellers. What is the correct action?

- a) Apply strong glue to the crack and proceed with the flight.
- b) Fly the drone but avoid high-speed maneuvers.
- c) Discard the damaged propeller and replace it before flying.

63. Which leg of the standard traffic pattern is perpendicular to the landing runway and leads directly into the final approach leg?

- a) Crosswind leg.
- b) Base leg.
- c) Upwind leg.

64. A resource you can use to find out detailed information about the effects of alcohol and legal and illegal drugs is

- a) NOTAMs.
- b) a Pilot's Operating Handbook.
- c) the PHAK (Pilot's Handbook of Aeronautical Knowledge).

65. A drone weighs 0.54 lbs. Is it required to be registered if flown under Part 107?

- a) No, drones under 0.55 lbs do not need registration.
- b) Yes, all drones flown under Part 107 must be registered regardless of weight.
- c) Only if it is flown in controlled airspace.

66. On a sectional chart, how is Class C airspace depicted?

- a) By solid magenta lines.
- b) By dashed magenta lines.
- c) By solid blue lines.

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67. During a crash, the lithium battery in your UAV is dislodged from its compartment and is found on the ground, 5 feet from the aircraft. You notice a dent in the battery, what should you do?

- a) Discard battery regardless of condition.
- b) Assess the condition of the battery and cautiously proceed, following manufacturer's recommendations.
- c) Perform a test flight to ensure that all items are working properly.

68. What is the minimum horizontal distance a small unmanned aircraft must maintain from a cloud?

- a) 500 feet.
- b) 1,000 feet.
- c) 2,000 feet.

69. Which statement about longitude and latitude is true?

- a) The 0° line of latitude passes through Greenwich, England.
- b) Lines of longitude cross the Equator at right angles.
- c) Lines of longitude are parallel to the Equator.

70. As altitude increases, what happens to the true airspeed of a fixed-wing sUAS flying at a constant indicated airspeed?

- a) True airspeed decreases.
- b) True airspeed remains the same.
- c) True airspeed increases because the air is less dense.

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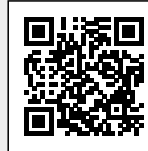
Response Scheme

Compare your answers with the following diagram and mark your score!

01: C	02: A	03: A	04: B
05: A	06: B	07: A	08: C
09: A	10: B	11: B	12: A
13: B	14: B	15: C	16: C
17: A	18: B	19: C	20: A
21: B	22: A	23: A	24: A
25: A	26: A	27: B	28: C
29: A	30: B	31: B	32: A
33: A	34: B	35: C	36: A
37: C	38: C	39: A	40: B
41: A	42: B	43: A	44: C
45: B	46: A	47: A	48: B
49: A	50: A	51: B	52: B
53: B	54: B	55: B	56: B
57: B	58: C	59: C	60: B
61: A	62: C	63: B	64: C
65: B	66: A	67: A	68: C
69: B	70: C		

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Response form

Use this form to mark your answers

01: _____	02: _____	03: _____	04: _____
05: _____	06: _____	07: _____	08: _____
09: _____	10: _____	11: _____	12: _____
13: _____	14: _____	15: _____	16: _____
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21: _____	22: _____	23: _____	24: _____
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37: _____	38: _____	39: _____	40: _____
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53: _____	54: _____	55: _____	56: _____
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65: _____	66: _____	67: _____	68: _____
69: _____	70: _____		