Instrument Rating Stage I Exam

Completely darken only one circle for each question on the answer form.

INSTRUMENT RATING REQUIREMENTS

1. How much actual instrument time can you log if you are in IFR weather conditions for 45 minutes, VFR weather conditions for 35 minutes, VFR between layers for 30 minutes, VFR on top for 20 minutes, and land in VFR conditions after flying a practice ILS approach with a view-limiting device that takes 15 minutes?
   A. 45 minutes
   B. 1 hour, 35 minutes
   C. 1 hour, 50 minutes

2. As a pilot in command of an IFR flight in an airplane, you must have logged within the last six months at least
   A. three hours of simulated or actual instrument time plus six instrument approaches.
   B. three instrument approaches plus three hours of actual or simulated instrument time.
   C. six instrument approaches, plus practice in holding procedures and intercepting and tracking courses.

3. As an instrument-rated airplane pilot, what is the appropriate procedure to regain instrument currency if you have not flown using instrument references for a period of 12 months?
   A. Retake the FAA Instrument Rating Airmen Knowledge and Practical Tests.
   B. Successfully complete an instrument proficiency check with a certificated instrument flight instructor.
   C. Obtain three hours of instrument practice in a simulator or airplane with a certificated instrument instructor.

4. In order to fly with a pilot who is logging simulated instrument time, the safety pilot must
   A. be an instrument-rated pilot who is instrument current.
   B. possess a flight instructor certificate with category and class ratings appropriate to the aircraft being flown.
   C. possess at least a private pilot certificate with category and class ratings appropriate to the aircraft being flown.

5. Assume you are departing on February 15 for a flight that requires you to have a commercial pilot certificate with an instrument rating. What is the lowest class of medical certification required, and what is the earliest date it could have been issued?
   A. First class, issued August 15 of the previous year
   B. Second class, issued February 1 of the previous year
   C. Second class, issued February 28 of two years previous

AVIATION PHYSIOLOGY

6. A rapid acceleration during instrument flight can create the illusion of
   A. maintaining a right bank.
   B. yaw movement to the left.
   C. being in a nose up attitude.

7. What is true about hypoxia?
   A. Hypoxia is typically triggered by tension, fear, or anxiety.
   B. Hypemic hypoxia can be caused by carbon monoxide poisoning due to a faulty cabin heating system.
   C. Stagnant hypoxia is an impairment of cellular respiration that can be caused by alcohol and other drugs.

8. According to FAR Part 91, the required minimum flight crew must use supplemental oxygen at all times above what cabin pressure altitude?
   A. 10,000 feet MSL
   B. 12,500 feet MSL
   C. 14,000 feet MSL

SRM CONCEPTS

9. Which is true about the methods to use checklists?
   A. Use a flow pattern when you have time and completing each step in the correct order is critical.
   B. When using a do-list, perform each step from memory and then refer to the checklist to verify that you have accomplished each task.
   C. When the checklist item sequence is not critical, use a flow pattern to guide you through the cockpit in a logical order and then refer to the checklist to verify that you completed each task.

10. What items should you include in a passenger briefing?
   A. Safety belts, air vents, fire extinguisher, engine operation, traffic and talking, your (passenger) questions
   B. Safety belts, air vents, fire extinguisher, egress and emergency, traffic and talking, your (passenger) questions
   C. Safety procedures, air vents, failure of equipment, egress and emergency, training and experience, your (passenger) questions

PRINCIPLES OF INSTRUMENT FLIGHT

11. During deceleration from cruise flight, precession error causes the attitude indicator to show a slight
   A. turn to the left.
   B. rise in pitch attitude.
   C. decrease in pitch attitude.

12. How often should you check the heading indicator and align it with the magnetic compass?
   A. Every 15 minutes
   B. Every 30 minutes
   C. Whenever it precesses 15°

13. During an established coordinated turn at a constant airspeed and altitude, use the ailerons to control the rate of turn and the rudder to control the
   A. bank.
   B. airspeed.
   C. quality of turn.

14. The three pressure instruments connected to the pitot-static system are the
   A. airspeed indicator, turn coordinator, and altimeter.
   B. airspeed indicator, altimeter, and vertical speed indicator.
   C. attitude indicator, heading indicator, and turn coordinator.

15. Prior to takeoff under IFR conditions, you find the vertical speed indicator to be in error by 125 ft/min. What action, if any, should you take to comply with regulations?
   A. No action is required.
   B. The weather must be VFR in order to take off in this situation.
   C. The indicator must be repaired by a qualified instrument technician.

16. What is the function of the AHRS for the PFD of an electronic flight display?
   A. To provide airspeed, altitude, and vertical speed information.
   B. To provide attitude, heading, and airspeed information.
   C. To provide attitude, heading, rate of turn, and slip/skid information.

17. When an electronic flight display detects a problem with an instrument sensor or data integrity
   A. the affected instrument is covered with a red X.
   B. an audio warning immediately alerts you to the failure.
   C. the PFD screen goes blank and the instruments are displayed on the MFD.

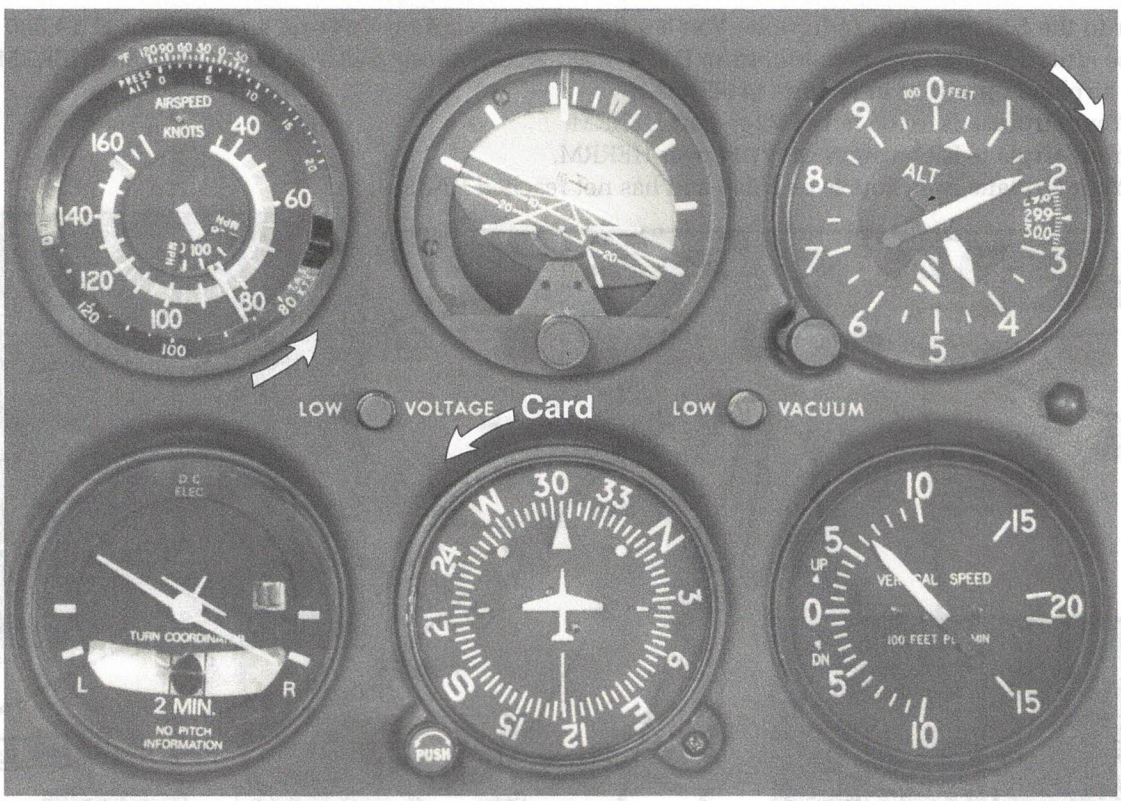
18. Which statement is true regarding aircraft control?
    A. Constantly holding control pressure enables you to precisly control aircraft attitude.
    B. To maintain aircraft control, you can use the trim wheel alone to establish a change in aircraft attitude.
    C. Aircraft control is the action you take as a result of cross checking and interpreting the flight instruments.

19. The main instrument for initially establishing a climb or descent attitude is the
    A. altimeter.
    B. attitude indicator.
    C. vertical speed indicator.

20. During level flight, you should correct altitude deviations of less than 100 feet by changing
    A. pitch.
    B. airspeed.
    C. pitch and power.

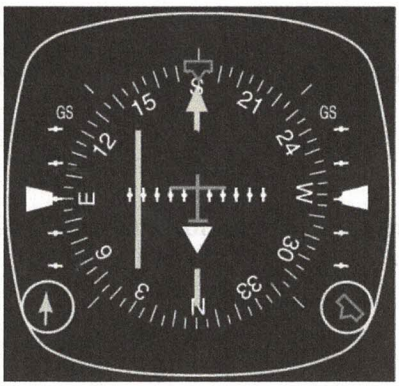
21. To level off from a climb or descent, lead the desired altitude by 10% of the
    A. airspeed.
    B. altitude.
    C. vertical speed.

22. Refer to the accompanying instrument panel illustration and interpret the flight attitude of the airplane. Note that one instrument has malfunctioned.
    A. Climbing left turn
    B. Climbing right turn
    C. Descending right turn

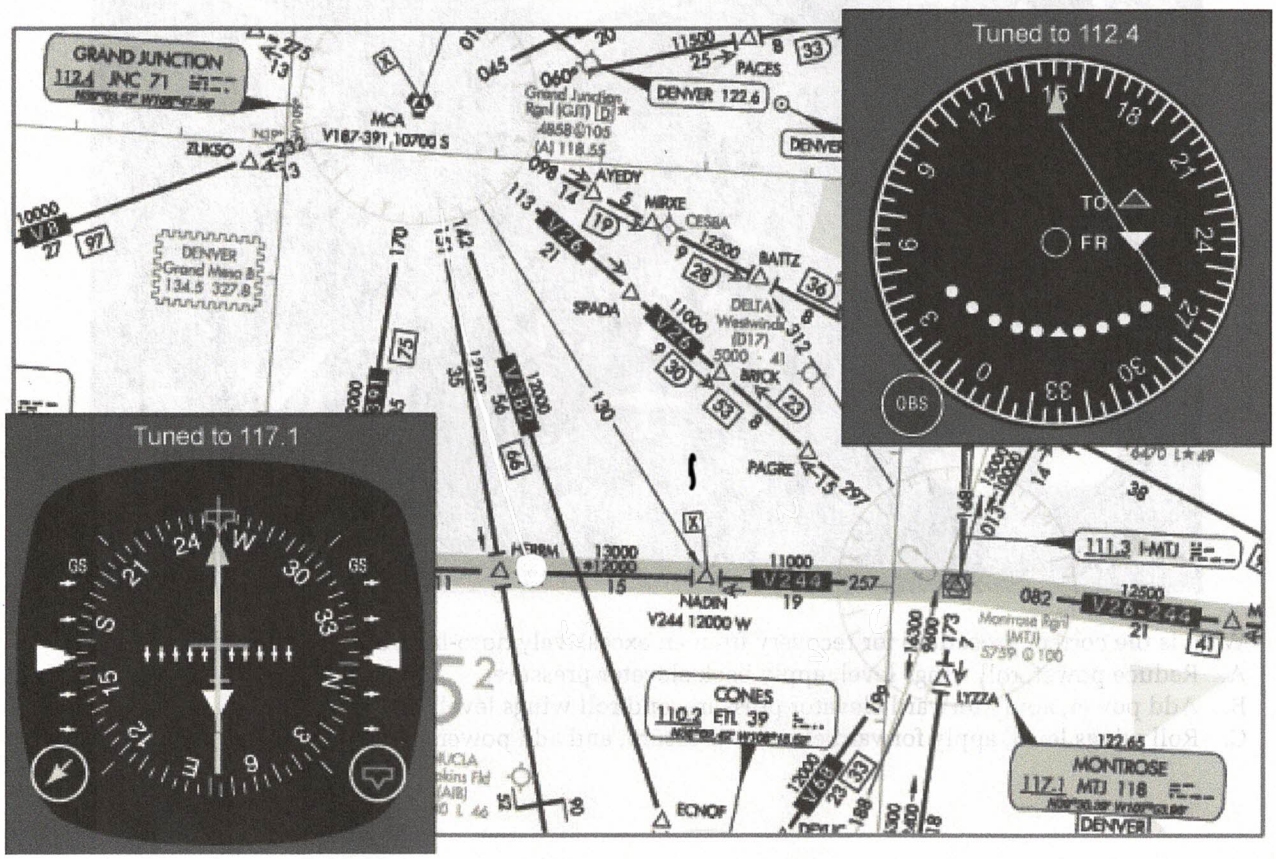


23. What is the correct procedure for recovery from an excessively nose-high unusual attitude?
    A. Reduce power, roll wings level, apply back elevator pressure.
    B. Add power, apply forward elevator pressure, and roll wings level.
    C. Roll wings level, apply forward elevator pressure, and add power.

24. Refer to the HSI. ATC assigned you a heading for traffic avoidance. After the traffic is no longer a factor, ATC clears you to intercept the 180° radial and proceed southbound on course. You decide to use a 30-degree intercept angle. What are your airplane's position, the desired intercept heading, and the intercept procedure you should follow?
    A. Your airplane is east of the desired course. Turn to an intercept heading of 150°. Wait until the needle centers and then begin your turn to the heading of the selected course.
    B. Your airplane is west of the desired course. Turn to an intercept heading of 210°. Note the closure rate of the CDI to determine when to begin the turn to intercept the course. Plan to complete the turn to the heading of the selected course as the CDI centers.
    C. Your airplane is west of the desired course. Turn to an intercept heading of 150°. Note the closure rate of the CDI to determine when to begin the turn to intercept the course. Plan to complete the turn to the heading of the selected course as the CDI centers.



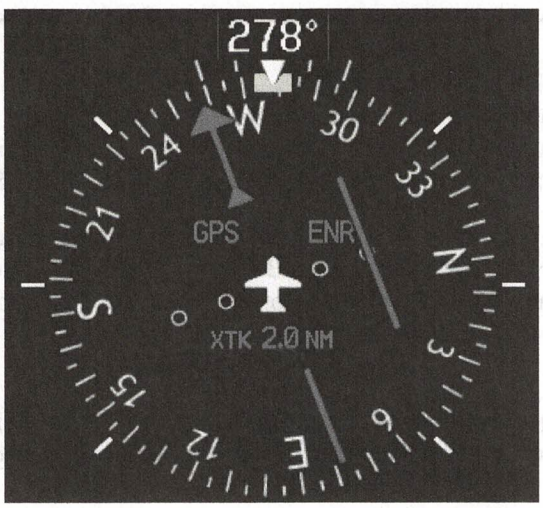
25. Refer to the HSI and VOR indicators. You are flying westbound on V244 on an IFR flight at 14,000 feet MSL cruise altitude. After you pass Montrose (MTJ) VOR, ATC requests that you report reaching HERRM. What is your airplane's position in relation to HERRM?
    A. Your airplane is to the left of V244 past HERRM.
    B. Your airplane is on course on V244 over HERRM.
    C. Your airplane is on course on V244 and has not reached HERRM.



26. In preparing for a flight under IFR, you notice that the VOR receivers in your airplane have not been tested for accuracy within the last 30 days. What is an acceptable method of checking VOR equipment accuracy?
    A. 1) Set both receivers to the same VOR facility; 2) center one needle on a FROM indication and one on a TO indication; 3) verify that the bearing differential between the two receivers does not exceed 6°.
    B. 1) Select the frequency for the VOT at your departure airport; 2) ensure you are receiving the VOT by listening to a series of dots or a continuous tone; 3) verify that the CDI centers ±4 degrees when the course selector is set to 180° with a TO indication and 360° with a FROM indication.
    C. Taxi your airplane to the VOT facility on the airport; 2) ensure you are receiving the VOT by listening to a series of dots or a continuous tone; 3) center the CDI and compare your VOR course indication to the published radial for the VOT; 4) ensure that the bearing error is not greater than ±4 degrees.

27. Which statement is true about using GPS navigation for a flight under IFR?
    A. You must perform the RAIM prediction check prior to departure to use WAAS-certified GPS equipment as the sole navigation equipment for domestic enroute and terminal IFR flights without alternate avionics for navigation to ground-based facilities.
    B. If your GPS equipment has WAAS capability, the airplane must be equipped with the alternate avionics necessary to receive the ground-based facilities that are appropriate for the route to the destination and to any required alternate and those ground-based facilities must be operational at the time of the flight.
    C. If your GPS equipment does not have WAAS capability, the airplane must be equipped with the alternate avionics necessary to receive the ground-based facilities that are appropriate for the route to the destination and to any required alternate and those ground-based facilities must be operational at the time of the flight.

28. You are navigating on an IFR cross-country flight using WAAS-certified GPS equipment. Which statement is true regarding this HSI indication?
    A. The airplane is one degree off course.
    B. The airplane is one nautical mile off course.
    C. The airplane is two nautical miles off course.



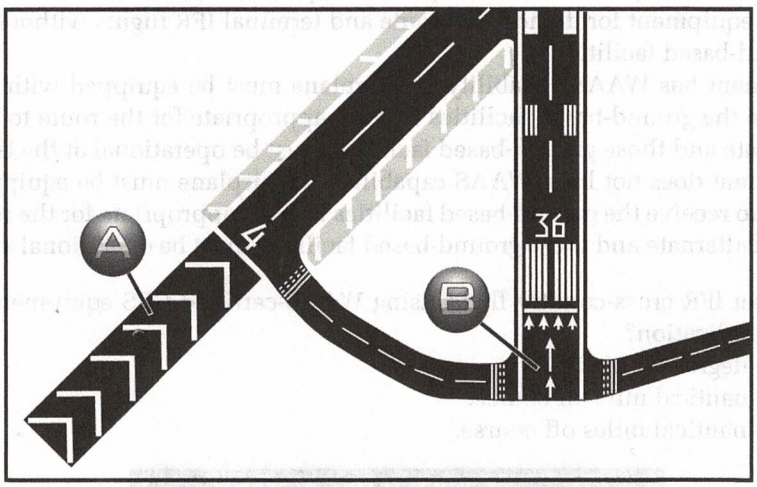
29. How can you determine if the GPS equipment in your aircraft is approved for IFR operations?
    A. Refer to TSO-C145 or TSO-C146.
    B. Select the IFR operations page on your GPS unit.
    C. Refer to the airplane flight manual (AFM) or AFM supplement.

30. When using GPS equipment for navigation, what is auto-sequencing?
    A. After passing a waypoint, the GPS display shows a FROM indication until 1/2 way to the next waypoint.
    B. The GPS receiver automatically cycles to the next waypoint in your fligh plan when you select Direct-To.
    C. The GPS receiver senses when your aircraft passes a waypoint and automatically cycles to the next waypoint.

31. What guidelines should you follow when planning a flight under IFR that uses random RNAV routes?
    A. Plan routes to begin and end over user-defined waypoints and avoid preferred departure and arrival routes to reduce traffic congestion.
    B. Plan routes to begin and end over arrival and departure fixes or navaids that are appropriate for the altitude that you will be flying and avoid prohibited and restricted airspace by three nautical miles.
    C. Define your route with a minimum of three waypoints for each ARTCC that you pass through with the first waypoint in each area located within 100 nautical miles of the preceding center's boundary.

THE FLIGHT ENVIRONMENT

Use the airport illustration to answer questions 32 and 33.



32. What do the markings on the runways indicate?
    A. Runways 4 and 36 are precision instrument runways.
    B. Runway 4 is a visual runway and Runway 36 is a precision instrument runway.
    C. Runway 4 is a nonprecision instrument runway and Runway 36 is a STOL runway.

33. For what purposes can the areas labeled A and B on Runways 4 and 36 be used?
    A. Area A can be used for taxi and takeoff; area B can be used for taxi, but not for takeoff.
    B. Area A is usable only as a blastpad, overrun, or stopway; area B cannot be used for taxi or takeoff.
    C. Area A is usable only as a blastpad, overrun, or stopway; area B is usable for taxi, takeoff, and landing rollout.

34. Assume you are flying a light airplane on an approach using a 3-bar VASI installation. What color combination (top to bottom) is appropriate when you are established on the proper glide slope?
    A. White, red, red
    B. Red, red, white
    C. Red, white, white

35. A row of flush-mounted flashing white lights perpendicular to the runway centerline are
    A. taxiway lead-off lights.
    B. land and hold short lights.
    C. displaced threshold lights.

36. The airspace which surrounds a tower-controlled airport and normally extends up to 2,500 feet above the airport is classified as
    A. Class C airspace.
    B. Class D airspace.
    C. Class E airspace.

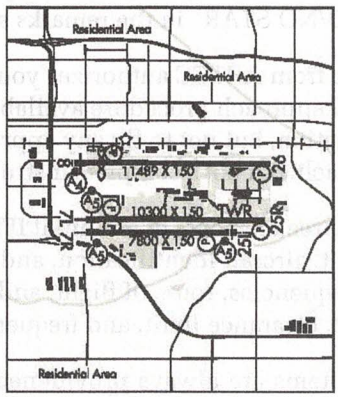
37. What type of airspace normally has a minimum flight visibility requirement of one statute mile for day VFR operations and does not require an IFR flight plan for IFR operations?
    A. Class E airspace lower than 10,000 feet MSL
    B. Class G airspace from the surface up to 10,000 feet MSL
    C. Class G airspace more than 1,200 feet AGL and above 10,000 feet MSL

38. Refer to the Chart Supplement Airport/Facility Directory excerpt for Phoenix Sky Harbor International Airport. What is true regarding Runway 8?
    A. The runway is 11,489 feet long with a displaced threshold of 898 feet.
    B. The runway is 11,489 feet long and has a high intensity approach light system.
    C. The runway has a medium intensity approach light system and a PAPI on the right side.

PHOENIX SKY HARBOR INTL (PHX)(KPHX) P(ANG) 3 E UTC-7 N33°26.06′ W112°00.70′ **PHOENIX**
1135 B TPA—See Remarks LRA Class I, ARFF Index D NOTAM FILE PHX **H-4J, L-5B, A**
IAP, AD

RWY 08-26: H11489X150 (CONC-GRVD) S-30, D-200, 2S-175, 2D-455, 2D/2D2-965 PCN 74 R/B/W/T HIRL
RWY 08: MALSF. PAPI(P4L)—GA 3.0° TCH 69′. Thld dsplcd 898′. Bldg.
RWY 26: REIL. PAPI(P4L)—GA 3.0° TCH 71′. Road. Rgt tfc.
RWY 07L-25R: H10300X150 (CONC-GRVD) S-30, D-235, 2S-175, 2D-435, 2D/2D2-940 PCN 70 R/B/W/T HIRL
RWY 07L: MALSR. PAPI(P4L)—GA 3.0° TCH 73′. RVR-T Pole. Rgt tfc.
RWY 25R: PAPI(P4L)—GA 3.0° TCH 70′. RVR-R Antenna.
RWY 07R-25L: H7800X150 (CONC-GRVD) S-30, D-200, 2S-175, 2D-400, 2D/2D2-1010 PCN 79 R/B/W/T HIRL
RWY 07R: MALSR. PAPI(P4L)—GA 3.0° TCH 70′. Pole.
RWY 25L: MALSR. PAPI(P4L)—GA 3.0° TCH 66′. Antenna.

RUNWAY DECLARED DISTANCE INFORMATION
RWY 07L: TORA-10300 TODA-10300 ASDA-10300 LDA-10300
RWY 07R: TORA-7800 TODA-7800 ASDA-7800 LDA-7800
RWY 08: TORA-11489 TODA-11489 ASDA-11489 LDA-10591
RWY 25L: TORA-7800 TODA-7800 ASDA-7800 LDA-7800
RWY 25R: TORA-10300 TODA-10300 ASDA-10300 LDA-10300
RWY 26: TORA-11489 TODA-11489 ASDA-11489 LDA-11489



SERVICE: S4 **FUEL** 100LL, JET A **OX** 1, 2, 3, 4 **MILITARY— JASU** 1(MD-3M) 1(MA-1A) **FUEL** J4-Ltd supply (MIL), A+ (C602-273-3770.) (NC-100LL, A) **FLUID** LPOX LOX **OIL** O-148 (MIL)
AIRPORT REMARKS: Attended continuously. ASDE-X in use. Operate transponders with altitude reporting mode and ADS-B (if equipped) enabled on all airport surfaces. TPA—2135(1000) lgt acft and non-turbo jets; 2635(1500) heavy acft and turbojets. NS ABT MT procedures are in effect at all times. Twy R and portions of Twy S and Twy T directly blo the twr are

39. What facility is primarily responsible for issuing IFR clearances and for monitoring each IFR flight during the enroute phase?
    A. Flight Service
    B. Clearance delivery
    C. Air route traffic control center (ARTCC)

40. When are ATIS broadcasts updated?
    A. Only when the ceiling and/or visibility changes by a reportable value
    B. Every 30 minutes if weather conditions are below basic VFR; otherwise, hourly
    C. Upon receipt of any official weather, regardless of content change or reported values

41. ATC directs you to *"reduce speed to 110"* and then later to *"resume normal speed."* Which statement is true regarding these requests?
    A. ATC typically issues this type of speed adjustment to ensure you are complying with published departure speed restrictions.
    B. *"Resume normal speed"* allows you to fly at a normal cruise airspeed and disregard any speed restrictions on a published procedure.
    C. To comply with the ATC request, reduce IAS to 110 knots and maintain that speed within 10 knots until you are told to *"resume normal speed."*

42. During a flight, the controller advises "*traffic 2 o'clock 5 miles southbound.*" You are holding 20° correction for a crosswind from the right. Where should you look for the traffic?
    A. Straight ahead
    B. 20° to the right of the airplane's nose
    C. 40° to the right of the airplane's nose

43. When climbing to your assigned altitude on an IFR clearance, ATC expects the last 1,000 feet of your climb to be at a rate of
    A. 200 to 500 ft/min
    B. 500 to 1,500 ft/min
    C. 1,000 ft/min

44. If you do not want to use a SID or STAR, you should
    A. notify clearance delivery prior to take off.
    B. take no further action; they are issued only on request.
    C. place "NO SID/NO STAR" in the remarks section of your flight plan.

45. A cruise clearance from ARTCC authorizes you to fly
    A. any published approach procedure available at your destination.
    B. to your destination, but not to fly any approach until you receive an approach clearance.
    C. a visual approach, but not a complete instrument approach unless you receive a specific approach clearance.

46. What are at least three elements of an initial IFR clearance received prior to departure?
    A. Clearance limit, aircraft identification, and any VFR-on-top requests
    B. Emergency frequencies, route of flight, and aircraft identification
    C. Route of flight, clearance limit, and frequency and transponder code information

47. Which clearance items are always providened in an abbreviated IFR departure clearance? (Assume a radar environment.)
    A. Clearance limit, and SID name, number, and transition
    B. Destination airport, altitude, and SID name, number, and transition
    C. Altitude, destination airport, and one or more fixes which identify the initial route of flight

48. Which rules apply to the pilot in command when operating on a VFR-on-top clearance?
    A. VFR only
    B. VFR and IFR
    C. VFR when "in the clear" and IFR when "in the clouds"

49. What cruising altitude should you select when flying on a magnetic course of 120°, assuming you are operating on an IFR flight plan with an altitude assignment of "VFR on top"?
    A. An odd-thousand foot altitude
    B. An even-thousand foot altitude
    C. An odd-thousand foot altitude, plus 500 feet

50. If you receive an IFR clearance void time and are unable to depart prior to the void time, ATC must be notified within
    A. 1 hour.
    B. 5 minutes.
    C. 30 minutes.

EXAM ANSWER FORM

DATE OF TEST			TEST TITLE OR NO.	TEST GRADE
MONTH	DAY	YEAR		

LAST NAME FIRST NAME

INSTRUCTIONS FOR MARKING THE ANSWER FORM. Completely darken only circle for each. DO NOT USE (X) OR (✓)Use black lead pencil. To make corrections completely erase incorrect response. Questions are arranged in vertical sequence as indicated by the arrow.

1	Ⓐ	Ⓑ	Ⓒ	26	Ⓐ	Ⓑ	Ⓒ	51	Ⓐ	Ⓑ	Ⓒ	76	Ⓐ	Ⓑ	Ⓒ
2	Ⓐ	Ⓑ	Ⓒ	27	Ⓐ	Ⓑ	Ⓒ	52	Ⓐ	Ⓑ	Ⓒ	77	Ⓐ	Ⓑ	Ⓒ
3	Ⓐ	Ⓑ	Ⓒ	28	Ⓐ	Ⓑ	Ⓒ	53	Ⓐ	Ⓑ	Ⓒ	78	Ⓐ	Ⓑ	Ⓒ
4	Ⓐ	Ⓑ	Ⓒ	29	Ⓐ	Ⓑ	Ⓒ	54	Ⓐ	Ⓑ	Ⓒ	79	Ⓐ	Ⓑ	Ⓒ
5	Ⓐ	Ⓑ	Ⓒ	30	Ⓐ	Ⓑ	Ⓒ	55	Ⓐ	Ⓑ	Ⓒ	80	Ⓐ	Ⓑ	Ⓒ
6	Ⓐ	Ⓑ	Ⓒ	31	Ⓐ	Ⓑ	Ⓒ	56	Ⓐ	Ⓑ	Ⓒ	81	Ⓐ	Ⓑ	Ⓒ
7	Ⓐ	Ⓑ	Ⓒ	32	Ⓐ	Ⓑ	Ⓒ	57	Ⓐ	Ⓑ	Ⓒ	82	Ⓐ	Ⓑ	Ⓒ
8	Ⓐ	Ⓑ	Ⓒ	33	Ⓐ	Ⓑ	Ⓒ	58	Ⓐ	Ⓑ	Ⓒ	83	Ⓐ	Ⓑ	Ⓒ
9	Ⓐ	Ⓑ	Ⓒ	34	Ⓐ	Ⓑ	Ⓒ	59	Ⓐ	Ⓑ	Ⓒ	84	Ⓐ	Ⓑ	Ⓒ
10	Ⓐ	Ⓑ	Ⓒ	35	Ⓐ	Ⓑ	Ⓒ	60	Ⓐ	Ⓑ	Ⓒ	85	Ⓐ	Ⓑ	Ⓒ
11	Ⓐ	Ⓑ	Ⓒ	36	Ⓐ	Ⓑ	Ⓒ	61	Ⓐ	Ⓑ	Ⓒ	86	Ⓐ	Ⓑ	Ⓒ
12	Ⓐ	Ⓑ	Ⓒ	37	Ⓐ	Ⓑ	Ⓒ	62	Ⓐ	Ⓑ	Ⓒ	87	Ⓐ	Ⓑ	Ⓒ
13	Ⓐ	Ⓑ	Ⓒ	38	Ⓐ	Ⓑ	Ⓒ	63	Ⓐ	Ⓑ	Ⓒ	88	Ⓐ	Ⓑ	Ⓒ
14	Ⓐ	Ⓑ	Ⓒ	39	Ⓐ	Ⓑ	Ⓒ	64	Ⓐ	Ⓑ	Ⓒ	89	Ⓐ	Ⓑ	Ⓒ
15	Ⓐ	Ⓑ	Ⓒ	40	Ⓐ	Ⓑ	Ⓒ	65	Ⓐ	Ⓑ	Ⓒ	90	Ⓐ	Ⓑ	Ⓒ
16	Ⓐ	Ⓑ	Ⓒ	41	Ⓐ	Ⓑ	Ⓒ	66	Ⓐ	Ⓑ	Ⓒ	91	Ⓐ	Ⓑ	Ⓒ
17	Ⓐ	Ⓑ	Ⓒ	42	Ⓐ	Ⓑ	Ⓒ	67	Ⓐ	Ⓑ	Ⓒ	92	Ⓐ	Ⓑ	Ⓒ
18	Ⓐ	Ⓑ	Ⓒ	43	Ⓐ	Ⓑ	Ⓒ	68	Ⓐ	Ⓑ	Ⓒ	93	Ⓐ	Ⓑ	Ⓒ
19	Ⓐ	Ⓑ	Ⓒ	44	Ⓐ	Ⓑ	Ⓒ	69	Ⓐ	Ⓑ	Ⓒ	94	Ⓐ	Ⓑ	Ⓒ
20	Ⓐ	Ⓑ	Ⓒ	45	Ⓐ	Ⓑ	Ⓒ	70	Ⓐ	Ⓑ	Ⓒ	95	Ⓐ	Ⓑ	Ⓒ
21	Ⓐ	Ⓑ	Ⓒ	46	Ⓐ	Ⓑ	Ⓒ	71	Ⓐ	Ⓑ	Ⓒ	96	Ⓐ	Ⓑ	Ⓒ
22	Ⓐ	Ⓑ	Ⓒ	47	Ⓐ	Ⓑ	Ⓒ	72	Ⓐ	Ⓑ	Ⓒ	97	Ⓐ	Ⓑ	Ⓒ
23	Ⓐ	Ⓑ	Ⓒ	48	Ⓐ	Ⓑ	Ⓒ	73	Ⓐ	Ⓑ	Ⓒ	98	Ⓐ	Ⓑ	Ⓒ
24	Ⓐ	Ⓑ	Ⓒ	49	Ⓐ	Ⓑ	Ⓒ	74	Ⓐ	Ⓑ	Ⓒ	99	Ⓐ	Ⓑ	Ⓒ
25	Ⓐ	Ⓑ	Ⓒ	50	Ⓐ	Ⓑ	Ⓒ	75	Ⓐ	Ⓑ	Ⓒ	100	Ⓐ	Ⓑ	Ⓒ