

Annual Instrument Exam

1 August 2002

(Incorporates change 1, dated 11 Oct 02)

(Required passing score: 80%)

Please do not mark on booklet

Annual Instrument Exam Questions (50)

(Questions 1 - 9 reference FAA-H-8083-15 (IFH))

1. (Refer to figures 85 and 86.) Which combination of indications confirms that you are approaching WAGGE intersection slightly to the right of the LOC centerline on departure?
 - A. 1 and 4
 - B. 2 and 3
 - C. 1 and 3
2. The rate of descent on the glide slope is dependent upon
 - A. true airspeed
 - B. ground speed
 - C. calibrated airspeed
3. (Refer to figure 98 and 99.) To which aircraft position does HSI presentation "F" correspond?
 - A. 16
 - B. 14
 - C. 10
4. After passing a VORTAC, the CDI shows half scale deflection to the right. What is indicated if the deflection remains constant for a period of time?
 - A. The airplane is flying away from the radial
 - B. The OBS is erroneously set on the reciprocal heading
 - C. The airplane is getting closer to the radial
5. The local altimeter setting should be used by all pilots in a particular area, primarily to provide for
 - A. the cancellation of altimeter error due to nonstandard temperatures aloft
 - B. better vertical separation of aircraft
 - C. more accurate terrain clearance in mountainous areas
6. (Change 1, 11 Oct 02) (Refer to figures 38, 39, 40, and 41.) (Refer to the FD excerpt below, and use the wind entry closest to the flight planned altitude.) Determine the time to be entered in block 10 of the flight plan.

Route of flight: Figures 38, 39, and 40
 Flight log and MAG VAR: Figure 39
 ACTON TWO ARRIVAL: Figure 41

FT	3000	6000	9000	12000
ABI		2033+13	2141+13	2142+05

- A. 1 hour 24 minutes.
- B. 1 hour 31 minutes.
- C. 1 hour 26 minutes.

7. Conditions that determine pitch attitude required to maintain level flight are

- A. airspeed, air density, wing design, and angle of attack
- B. relative wind, pressure altitude, and vertical lift component
- C. flightpath, wind velocity, and angle of attack

8. What is the first fundamental skill in attitude instrument flying?

- A. Instrument interpretation
- B. Aircraft control
- C. Instrument cross-check

9. (Refer to figure 147.) Which is the correct sequence for recovery from the unusual attitude indicated?

- A. Add power, lower nose, level wings, return to original attitude and heading
- B. Stop turn by raising right wing and add power at the same time, lower the nose, and return to original attitude and heading
- C. Level wings, add power, lower nose, descend to original attitude, and heading

(Question 10 references flight computer)

10. (Refer to figure 38.) What CAS must be used to maintain the filed TAS at the flight planned altitude if the outside air temperature is +05°C?

- A. 133 KCAS
- B. 129 KCAS
- C. 139 KCAS

(Questions 11 - 17 reference AC 00-45 (AWS))

11. A pilot planning to depart at 1100Z on an IFR flight is particularly concerned about the hazard of icing. What sources reflect the most accurate information on icing conditions (current and forecast) at the time of departure?

- A. The Area Forecast, and the Freezing Level Chart
- B. Low-Level Significant Weather Prognostic Chart, and the Area Forecast
- C. Pilot weather reports (PIREPs), AIRMETs, and SIGMETs

12. (Refer to figure 8.) What weather conditions are depicted in the area indicated by arrow D on the Radar Summary Chart?

- A. Strong to very strong echoes within the smallest contour, echo bases 29,000 feet MSL, and cell in northeast Nebraska moving northeast at 50 knots
- B. Echo tops 4,100 feet MSL, strong to very strong echoes within the smallest contour, and area movement toward the northeast at 50 knots
- C. Intense to extreme echoes within the smallest contour, echo tops 29,000 feet MSL, and cell movement toward the northeast at 50 knots

13. The Hazardous Inflight Weather Advisory Service (HIWAS) is a continuous broadcast over selected VORs of

- A. SIGMETs, CONVECTIVE SIGMETs, AIRMETs, Severe Weather Forecast Alerts (AWW), and Center Weather Advisories
- B. SIGMETs, CONVECTIVE SIGMETs, AIRMETs, Wind Shear Advisories, and Severe Weather Forecast Alerts (AWW)
- C. Wind Shear Advisories, Radar Weather Reports, SIGMETs, CONVECTIVE SIGMETs, AIRMETs, and Center Weather Advisories (CWA)

14. The reporting station originating this Aviation Routine Weather Report has a field elevation of 620 feet. If the reported sky cover is one continuous layer, what is its thickness (tops of OVC are reported at 6,500 feet)?

METAR KMDW 121856Z AUTO 32005KT 1 1/2SM +RA

BR OVC007 17/16 A2980

- A. 5,880 feet
- B. 5,180
- C. 5,800

15. The body of a Terminal Aerodrome Forecast (TAF) covers a geographical proximity within a

- A. 5 statute mile radius from the center of an airport runway complex
- B. 5 nautical mile radius of the center of an airport
- C. 5 to 10 statute mile radius from the center of an airport runway complex

16. (Refer to figure 8.) What weather conditions are depicted in the area indicated by arrow A on the Radar Summary Chart?

- A. Moderate to strong echoes; echo tops 30,000 feet MSL; line movement toward the northwest
- B. Strong to very strong echoes; echo tops 30,000 feet MSL; thunderstorms and rain showers
- C. Weak to moderate echoes; average echo bases 30,000 feet MSL; cell movement toward the southeast; rain showers with thunder

17. A pilot reporting turbulence that momentarily causes slight, erratic changes in altitude and/or attitude should report it as

- A. light turbulence
- B. moderate turbulence
- C. light chop

(Questions 18 - 22 reference AIM and FAA-H-8083-15 (IFH))

18. (Refer to figures 35 and 35A.) At which point does the BUJ.BUJ3 arrival begin?

- A. At the BUJ VORTAC
- B. At the TXK VORTAC
- C. At BOGAR intersection

19. (Refer to figure 36A.) What is the minimum number of waypoints required for the complete RNAV RWY 33 approach procedure including the IAFs and missed approach procedure?

- A. Three waypoints
- B. Two waypoints
- C. One waypoint

20. (Refer to figure 91.) What lighting is indicated on the chart for Jackson Hole Airport

- A. No lighting available
- B. Lights on prior request
- C. Pilot controlled lighting

21. (Refer to figure 76.) Which indication would be an acceptable accuracy check of both VOR receivers when the aircraft is located on the VOR receiver checkpoint at the Helena Regional Airport?

- A. B
- B. C
- C. A

22. (Refer to figure 78.) When eastbound on V86 between Whitehall and Livingston, the minimum altitude that you should cross BZN is

- A. 10,400 feet
- B. 9,300 feet

- C. 8,500 feet

(Questions 23 - 40 reference AIM)

23. Acceptable navigational signal coverage at the MOCA is assured for a distance from the VOR of only

- A. 12 NM
- B. 25 NM
- C. 22 NM

24. For IFR operations off of established airways below 18,000 feet, VOR navigational aids used to describe the "route of flight" should be no more than

- A. 40 NM apart
- B. 80 NM apart
- C. 70 NM apart

25. (Refer to figure 136.) Which illustration would a pilot observe if the aircraft is on a glidepath higher than 3.5°?

- A. 9
- B. 11
- C. 8

26. What is the expected duration of an individual microburst?

- A. One microburst may continue for as long as 2 to 4 hours
- B. Two minutes with maximum winds lasting approximately 1 minute
- C. Seldom longer than 15 minutes from the time the burst strikes the ground until dissipation

27. Which service is provided for IFR arrivals by a FSS located on an airport without a control tower?

- A. Airport advisories
- B. All functions of approach control
- C. Automatic closing of the IFR flight plan

28. (Refer to figure 13.) What effect will a microburst encounter have upon the aircraft in position 4?

- A. Strong updraft
- B. Significant performance increase
- C. Strong tailwind

29. (Refer to figure 44.) What aircraft equipment code should be entered in block 3 of the flight plan?

- A. C
- B. A

C. I

30. Which report should be made to ATC without a specific request when not in radar contact?

- A. Entering instrument meteorological conditions
- B. When leaving final approach fix inbound on final approach
- C. Correcting an E.T.A. any time a previous E.T.A. is in error in excess of 2 minutes

31. What point at the destination should be used to compute estimated time en route on an IFR flight plan?

- A. The initial approach fix on the expected instrument approach
- B. The final approach fix on the expected instrument approach
- C. The point of first intended landing

32. The RVR minimums for takeoff or landing are published in an IAP, but RVR is inoperative and cannot be reported for the runway at the time. Which of the following would apply?

- A. RVR minimums may be disregarded, providing all other components of the ILS system are operative
- B. RVR minimums which are specified in the procedure should be converted and applied as ground visibility
- C. RVR minimums may be disregarded, providing the runway has an operative HIRL system

33. A pilot is making an ILS approach and is past the OM to a runway which has a VASI. What action should the pilot take if an electronic glide slope malfunction occurs and the pilot has the VASI in sight?

- A. The pilot may continue the approach and use the VASI glide slope in place of the electronic glide slope
- B. The pilot should inform ATC of the malfunction and then descend immediately to the localizer MDA and make a localizer approach
- C. The pilot must request an LOC approach, and may descend below the VASI at the pilot's discretion

34. How does a pilot determine if DME is available on an ILS/LOC?

- A. LOC/DME frequencies available in the Airman's Information Manual
- B. IAP indicate DME/TACAN channel in the LOC frequency box
- C. LOC/DME are indicated on en route low altitude frequency box

35. (Refer to figure 133.) What is the minimum altitude descent procedure if cleared for the S-ILS 9 approach from Seal Beach VORTAC?

- A. Descend and maintain 3,000 to JASER INT, descend to 2,500 while established on the LOC course inbound, intercept and maintain the GS to 991 (DH)
- B. Descend and maintain 3,000 to JASER INT, descend to 2,800 when established on the LOC course, intercept and maintain the GS to 991 (DH)

- C. Descend and maintain 3,000 to JASER INT, descend to and maintain 2,500 until crossing SWAN LAKE, descend and maintain 1,260 until crossing AGNES, and to 991 (DH) after passing AGNES
36. (Refer to figure 130.) How does an LDA facility, such as the one at Roanoke Regional, differ from a standard ILS approach facility?
- A. The GS is unusable beyond the MM
 - B. The LOC is wider
 - C. The LOC is offset from the runway
37. Which indications are acceptable tolerances when checking both VOR receivers by use of the VOT?
- A. 001° FROM and 005° FROM, respectively
 - B. 360° TO and 003° TO, respectively
 - C. 176° TO and 003° FROM, respectively
38. When should pilots state their position on the airport when calling the tower for takeoff?
- A. When visibility is less than 1 mile
 - B. When departing from a runway intersection
 - C. When parallel runways are in use
39. To comply with ATC instructions for altitude changes of more than 1,000 feet, what rate of climb or descent should be used?
- A. As rapidly as practicable to 500 feet above/below the assigned altitude, and then at 500 feet per minute until the assigned altitude is reached
 - B. As rapidly as practicable to 1,000 feet above/below the assigned altitude, and then between 500 and 1,500 feet per minute until reaching the assigned altitude
 - C. 1,000 feet per minute during climb and 500 feet per minute during descents until reaching the assigned altitude

Figure 113