DOCUMENT
GSM-AUS-AASA-AFC

DOCUMENT TITLE

AUTOMATIC FLIGHT CONTROL SYSTEMS (CASA ATPL)

CHAPTER 9 – AFCS SAMPLE QUESTIONS

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AFCS SAMPLE QUESTIONS

1. AFDS modes which are pitch modes are:

A. HDG HOLD
B. HDG SEL
C. LOC and GS
D. V/S and VNAV PTH.

2. The F/O is flying a multiple autopilot equipped aircraft. The autopilots which should be engaged are:

A. R only or C only unless performing an autoland
B. L and R at all times
C. C and R at all times
D. L, C and R at all times.

3. The operation of a parallel connected autopilot system causes:

A. The flight controls in the cockpit to remain still when the autopilot is engaged.
B. The flight controls in the cockpit to move when the autopilot is engaged.
C. The system to be unavailable for autoland operations.
D. Autopilot disconnect warning sirens to be unnecessary.

4. When an autopilot system “hardover” occurs:

A. The control surface servomotors go to full deflection.
B. The control surface servomotors go to partial deflection.
C. The trim tab servo actuator moves to full deflection.
D. The trim tab servo actuator is unserviceable.

5. The inputs considered to be “outer loop” in an autopilot system are:

A. Attitude and yaw damper
B. Pitch and roll
C. Altitude and heading
D. Yaw and pitch.

6. During a multi-autopilot CAT III autoland, an approach submode of ROLLOUT is annunciated on the Flight Mode Annunciator roll mode to replace LOC at approximately 5 FT RA. Concerning autothrottle operation when ROLLOUT is engaged the:

A. Autothrottle mode changes to THR HOLD.
B. Autothrottle remains in IDLE mode until A/T disengagement.
C. Autothrottle is disarmed when ROLLOUT becomes the engaged roll mode.
D. Autothrottle mode changes to GA when ROLLOUT is the engaged roll mode.

7. With reference to a typical AP/FD Mode Control Panel:

A. The vertical speed mode may be de-selected by selecting altitude hold.
B. Altitude hold may be de-selected by rotating the vertical speed wheel.
C. The altitude select knob will deselect altitude hold immediately.
D. The vertical speed window always indicates climbs or descents at standard rate.

8. The bank angle limit select knob on the MCP has an AUTO selection. When set to AUTO, the autopilot will:

A. Limit the bank angle in HDG select mode to 15° at high TAS increasing progressively to 25° as TAS decreases.
B. Limit the bank angle in HDG select mode to 15° below 250 kts TAS increasing progressively to 25° as TAS increases above 250 kts TAS.
C. Limit the bank angle to a standard rate one turn at all speeds.
D. Limit the bank angle to 15° in LNAV only.

9. Flight modes which are not able to be engaged simultaneously on a typical autoflight system are:

A. THR HOLD, N1, V/S and FD
B. SPD, VNAV PATH, LNAV and CMD
C. SPD, V/S, HDG SEL and CMD
D. SPD, G/S, LOC and F/D.

10. The Autoland Status Annunciator (ASA) monitors:

A. Localiser integrity
B. Autopilot systems status
C. Glideslope integrity
D. The status of all air and ground systems.

11. When an aircraft is climbed or descended using the flight level change function (FLCH) of the autoflight system, the thrust settings used by the autothrottle system are:

A. On climb, thrust is automatically set to a maximum of climb thrust and on descent, the throttles are automatically retarded to a minimum of idle thrust.
B. On climb or descent the thrust setting is determined according to the current IAS.
C. In Flight Level Change mode, the autothrottle is disabled so all thrust settings must be manually selected by the pilot.
D. On climb, thrust will be set to Max Continuous Thrust and on descent to 50% N1.

12. With a fully coupled ILS autoland the FMC will command a capture of the localiser and glideslope if the APP mode is armed. In this case:

A. ALT HOLD will be automatically replaced with GS at glideslope capture.
B. ALT HOLD must be manually deselected and replaced with GS at glideslope capture.
C. ALT HOLD cannot be engaged with the approach mode armed.
D. ALT HOLD will only disengage if the aircraft flies down onto the glideslope from above.

13. To make a missed approach from a coupled autoland approach once the LOC and GS have been captured with RA below 1500 ft the correct procedure is to:

A. Select ALT HOLD
B. Disengage the autopilot
C. Deselect GS and LOC
D. Select GA.

14. The autothrottle is on and the autopilot is off with the flight director on and ALT HOLD, SPD and HDG SEL engaged:

A. This situation is not possible.
B. The flight director will indicate pitch to hold altitude by way of pitch bar commands.
C. The flight director will not engage in this situation.
D. The flight director command bars will be hidden in this situation.

15. With regard to the monitoring of autopilot systems via the autoland status indicator:

A. A LAND 2 indication means the level of redundancy is such that any single fault would not prevent the autopilot system from making an automatic landing (fail operational).
B. A LAND 3 indication means the level of redundancy is such that any single fault would not cause a significant deviation from the flight path (fail operational).
C. A LAND 2 indication means the level of redundancy is such that any single fault would not cause a significant deviation from the flight path (fail passive).
D. A LAND 2 indication means the level of redundancy is such that any single fault would not prevent the autopilot system from making an automatic landing (fail passive).

16. In level flight an AP/FDS MCP shows a selected IAS of 280 kts in altitude hold mode. The FD, autopilot and autothrottle are then all turned off. In this case the 280 IAS indication will:

A. Be blanked off and not displayed.
B. Remain as before but will have no significance on the speed tape display.
C. Remain as a reminder to the pilot that the system is still in altitude hold.
D. Remain displayed in the window and as the command airspeed bug on the speed tape.

17. AFDS modes are not able to be selected together in:

A. HDG HOLD and V/S
B. HDG SEL and ALT HOLD
C. HDG HOLD and LOC
D. V/S and VNAV PATH

18. You are descending at 3000 feet/min in vertical speed mode (VS) to the MCP selected altitude of 9000 ft with an autopilot engaged. As you approach this altitude:

A. The vertical speed annunciator will come on and the alt hold annunciator will go out.
B. The vertical speed digital display will change to zero.
C. The GPWS will advise you aurally that the desired altitude is approaching
D. The VS annunciator will be replaced by ALT CAP at capture the ALT HOLD.

19. What is displayed on the PFD?

A. ADF information
B. VOR radial
C. ILS deviation
D. All of the above.

20. A vertical gyroscope provides?

A. Rate of change information in azimuth
B. Pitch and turn signals
C. Stable pitch and roll attitude information
D. Stable roll attitude information only.

21. In an autopilot the stabilisation process is a function of:

A. The control wheel steering system
B. Automatic pitch trim
C. The inner loop
D. Altitude hold mode.

22. GA mode is engaged:

A. Automatically at GS capture
B. Automatically when flaps are away from UP
C. By the pilot pressing a button on the thrust levers
D. By the pilot selecting flare.

23. The CADC requires three inputs, these are:

A. Airspeed, groundspeed and heading
B. TAS, Mach Number and altitude
C. Airspeed, TAT and attitude
D. Pitot pressure, static pressure and TAT.

24. The AFDS will automatically disengage from LNAV mode if:

A. FL CH mode is selected
B. The pre-programmed route is altered
C. A new desired altitude is selected
D. HDG SEL is selected.

25. When altitude hold is engaged, the aircraft:

A. Will maintain the pitch attitude at time of engagement
B. Heading mode must be engaged first
C. Will sense pressure changes and maintain the pressure altitude selected
D. Will sense altitude changes and maintain the radio altitude selected.

26. When disengaging the autopilot the:

A. Aircraft flight controls should be held firmly
B. Hydraulic pumps should be turned off
C. Aircraft flight controls and thrust levers should be held firmly
D. Flight director should be turned off first.

27. Autoland always requires:

A. Three autopilots to function
B. Altitude hold to be engaged
C. Two automatic systems which continuously compare ILS deviation and RA data
D. Attitude hold to be engaged.

28. From where does the autopilot LOC capture mode receive its input?

A. LOC only
B. LOC and course error signals
C. LOC and heading signals
D. LOC and glideslope signal.

29. If the EADI is receiving invalid information, what are the indications?

A. A blank screen
B. An amber flag, no display and a blank screen
C. A white flashing screen with a red display
D. Normal screen with red name of the specific invalid indication.

30. The basic modes of an autopilot consist of:

A. Stabilising the aircraft around its centre of gravity
B. Controlling the path of the aircraft vertically only
C. Controlling the movement of the centre of gravity of the aircraft
D. Controlling the path of the aircraft horizontally or vertically.

ANSWERS TO SAMPLE QUESTIONS

QUESTION	ANSWER		QUESTION	ANSWER		QUESTION	ANSWER
1	D		11	A		21	C
2	A		12	A		22	C
3	B		13	D		23	D
4	A		14	B		24	D
5	C		15	C		25	C
6	B		16	D		26	A
7	A		17	D		27	C
8	A		18	D		28	C
9	A		19	C		29	B
10	B		20	C		30	A

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