

PRACTICE EXAM 30 SIMULATION

1. A VOR provides the pilot with:

- A. Magnetic course (azimuth) guidance to or from the station
- B. Distance only
- C. Vertical guidance
- D. Groundspeed only

2. DME provides the pilot with:

- A. Slant-range distance to the station
- B. Course guidance
- C. Vertical guidance
- D. Magnetic heading

3. An ILS provides both lateral guidance from the localizer and vertical guidance from the:

- A. DME
- B. Marker beacon
- C. Glide slope
- D. Compass locator

4. GPS provides position information that is:

- A. Limited to line-of-sight of a ground station
- B. Available only in daylight

- C. Dependent on VOR coverage
- D. Worldwide, continuous, and independent of ground stations

5. RNAV (area navigation) allows an aircraft to:

- A. Navigate only to or from ground NAVAIDs
- B. Fly any desired path within its navigation coverage
- C. Fly without any navigation source
- D. Operate only in Class A

6. WAAS improves GPS by providing:

- A. More satellites
- B. Stronger signals
- C. A magnetic backup
- D. Correction signals improving accuracy and integrity

7. To track a VOR course with normal sensing and the CDI deflected left, the pilot:

- A. Turns right
- B. Reverses the OBS
- C. Turns left toward the needle
- D. Climbs

8. To intercept a VOR course, the pilot sets the OBS, determines the aircraft's position relative to the course, and:

- A. Turns to an intercept heading at a reasonable angle
- B. Maintains heading until the needle centers

- C. Descends
- D. Reverses the OBS

9. The CDI on an ILS localizer is more sensitive than a VOR by a factor of about:

- A. Two
- B. One-half
- C. Four
- D. Ten

10. A pilot flying a DME arc maintains the constant distance by:

- A. Flying directly at the station
- B. Holding a single heading
- C. Descending at a constant rate
- D. Flying short segments and turning to hold the distance

11. An autopilot relieves the pilot of continuous manual control by:

- A. Maintaining commanded attitudes, headings, altitudes, or courses
- B. Navigating without input
- C. Replacing the instruments
- D. Eliminating the need to monitor

12. A flight director displays:

- A. The fuel state
- B. The weather

- C. The transponder code
- D. Command guidance cues the pilot or autopilot follows

13. Mode awareness means the pilot:

- A. Ignores the autopilot
- B. Knows which modes are engaged and what the automation is doing
- C. Relies solely on the automation
- D. Disables the flight director

14. A risk of over-reliance on automation is:

- A. Improved skills
- B. Lower fuel burn
- C. Faster flight
- D. Erosion of manual flying skills and reduced situational awareness

15. Automation management is the skill of:

- A. Knowing when and how to use automation, and when to hand-fly
- B. Avoiding the autopilot entirely
- C. Letting the autopilot fly unmonitored
- D. Relying solely on automation

16. A pilot engaging the autopilot in heading mode expects the aircraft to:

- A. Climb
- B. Turn to and hold the selected heading

- C. Descend
- D. Navigate a course

17. A pilot engaging the autopilot in navigation (NAV) mode expects it to:

- A. Hold a heading only
- B. Climb at a fixed rate
- C. Track the selected navigation course
- D. Maintain airspeed only

18. A pilot engaging altitude hold expects the autopilot to:

- A. Climb continuously
- B. Descend continuously
- C. Maintain the current altitude
- D. Turn

19. A coupled approach is one in which the autopilot:

- A. Is disengaged
- B. Holds only heading
- C. Maintains altitude only
- D. Flies the approach guidance (localizer/glide slope or LPV)

20. During a coupled approach, the pilot must:

- A. Monitor the modes and tracking, ready to take over
- B. Ignore the raw data

- C. Disengage all instruments
- D. Rely solely on the map

21. A moving-map display improves situational awareness by showing the aircraft's:

- A. Fuel only
- B. Position relative to the route, fixes, and terrain
- C. Engine data only
- D. Weight

22. A flight management system (FMS) integrates navigation by:

- A. Replacing the pilot
- B. Managing the flight plan, navigation sources, and performance
- C. Eliminating charts
- D. Controlling only the engine

23. A pilot must verify the autopilot's commanded action matches the:

- A. Fuel state
- B. Weather
- C. Pilot's intent and the flight plan
- D. Transponder code

24. A pilot recognizing the autopilot is not capturing the localizer should:

- A. Increase the autopilot authority
- B. Ignore it

- C. Wait indefinitely
- D. Take manual control and reassess

25. The GPS CDI sensitivity transitions from enroute (wide) to approach (narrow), analogous to the increasing sensitivity of:

- A. The magnetic compass
- B. The altimeter
- C. A localizer near the runway
- D. A VOR over distance

26. A pilot using automation for workload management may delegate routine tasks to the autopilot to:

- A. Eliminate monitoring
- B. Free attention for higher-priority tasks
- C. Avoid the checklist
- D. Increase speed

27. A pilot must cross-check the automation against the raw navigation data because the automation:

- A. Is always correct
- B. Can be misprogrammed or fail
- C. Replaces the raw data
- D. Eliminates errors

28. An autopilot disconnect, whether commanded or due to failure, requires the pilot to:

- A. Re-engage immediately
- B. Ignore it

- C. Resume manual control and continue flying the aircraft
- D. Land immediately

29. A pilot programming a direct-to a fix in the GPS should verify the:

- A. Fuel grade
- B. Correct fix is selected and the course is sensible
- C. Transponder code
- D. Weather

30. A pilot flying with the flight director should:

- A. Ignore the command bars
- B. Follow the command guidance while monitoring the raw data
- C. Disable the instruments
- D. Rely on bodily sensation

31. A pilot must understand that the autopilot follows what it is commanded, so an incorrect entry results in:

- A. The aircraft flying the incorrect command
- B. No effect
- C. Improved accuracy
- D. A corrected course

32. A pilot transitioning from enroute navigation to an approach must ensure the navigation source is set to the:

- A. Wrong frequency

- B. Correct approach (e.g., localizer or GPS approach mode)
- C. Transponder
- D. Altimeter

33. The autopilot's vertical modes include altitude hold, vertical speed, and:

- A. Heading
- B. Roll
- C. Airspeed/pitch or a captured altitude
- D. Navigation

34. The autopilot's lateral modes include heading, navigation, and:

- A. Altitude hold
- B. Vertical speed
- C. Approach (localizer/back course)
- D. Airspeed

35. A pilot must monitor the autopilot during an altitude capture to ensure it:

- A. Levels at the selected altitude
- B. Continues climbing
- C. Descends
- D. Turns

36. A pilot recognizing an automation "mode confusion" situation should:

- A. Revert to a lower level of automation or hand-fly to regain control

- B. Add more automation
- C. Ignore the confusion
- D. Increase speed

37. A pilot navigating with VOR must identify the station by its:

- A. CDI deflection
- B. TO/FROM flag
- C. Morse code identifier
- D. DME readout

38. A pilot navigating with GPS for IFR must ensure the database is:

- A. Expired
- B. Current
- C. A handheld unit
- D. Disabled

39. A pilot flying a coupled ILS must brief the missed approach and be prepared to:

- A. Disconnect the autopilot and hand-fly the go-around
- B. Let the autopilot continue below DA
- C. Ignore the DA
- D. Circle indefinitely

40. The fundamental principle of automation use is that the pilot remains:

- A. A passive observer

- B. In command and responsible, using automation as a tool
- C. Reliant solely on the autopilot
- D. Free to ignore the aircraft

41. A pilot intercepting a course in NAV mode should verify the autopilot:

- A. Disengages
- B. Captures and tracks the course
- C. Climbs
- D. Holds heading only

42. A pilot must select the proper CDI source (VOR, localizer, or GPS) so that the autopilot in NAV mode:

- A. Holds heading
- B. Climbs
- C. Tracks the intended navigation source
- D. Descends

43. A pilot flying an LPV approach with the autopilot coupled descends along the glidepath to the:

- A. Decision altitude
- B. MDA
- C. Circling altitude
- D. Maximum altitude

44. A pilot recognizing the autopilot is mistrimming or behaving abnormally should:

- A. Increase its authority

- B. Ignore it
- C. Wait
- D. Disconnect it and hand-fly

45. A pilot using a GPS moving map for awareness must still:

- A. Rely solely on the map
- B. Cross-check with other navigation and avoid fixation
- C. Disable the CDI
- D. Ignore the raw data

46. A pilot flying with automation in instrument conditions must maintain:

- A. Reliance on the autopilot only
- B. Bodily sensation
- C. A single-instrument focus
- D. Situational awareness and a disciplined scan, including the automation status

47. A pilot transitioning to manual flight after autopilot use should be prepared for:

- A. No change
- B. Improved automation
- C. Reduced workload
- D. An increased workload requiring active control

48. A pilot must ensure the autopilot is certified and approved for the operation, such as a:

- A. Coupled approach within its limitations

- B. Aerobatic maneuver
- C. Zero-zero landing always
- D. Unlimited use

49. A pilot flying a back-course localizer with the autopilot must select the:

- A. Heading mode only
- B. Altitude hold only
- C. Vertical speed only
- D. Back-course (BC) approach mode to avoid reverse sensing

50. A pilot must verify the active and armed modes on the flight mode annunciator to maintain:

- A. Fuel awareness
- B. Weather awareness
- C. Mode awareness
- D. Traffic awareness

51. A pilot recognizing the automation has captured the wrong altitude should:

- A. Continue
- B. Ignore it
- C. Correct the selection or take manual control
- D. Increase speed

52. A pilot integrating multiple navigation sources (VOR, GPS, ILS) for an approach must ensure the:

- A. Correct source is selected and identified for the segment

- B. Wrong source is used
- C. All sources are ignored
- D. Transponder is set

53. A pilot using automation must avoid complacency by:

- A. Actively monitoring and verifying the automation's performance
- B. Trusting it blindly
- C. Disabling the displays
- D. Ignoring the modes

54. A pilot flying a long enroute segment may use the autopilot to:

- A. Eliminate monitoring
- B. Reduce fatigue while maintaining oversight
- C. Avoid navigation
- D. Increase speed

55. A pilot recognizing an unexpected autopilot maneuver should first:

- A. Increase its authority
- B. Add automation
- C. Wait
- D. Disconnect and take manual control

56. A pilot must understand that the autopilot is a tool that:

- A. Reduces workload but requires monitoring and does not replace pilot judgment

- B. Replaces the pilot
- C. Eliminates errors
- D. Flies without input

57. A pilot flying an approach must ensure the navigation receiver and autopilot are configured for the:

- A. Wrong runway
- B. Enroute phase
- C. Departure
- D. Specific approach being flown

58. A pilot using GPS direct-to navigation must monitor the:

- A. Fuel grade only
- B. Weather only
- C. Course, distance, and waypoint sequencing
- D. Transponder only

59. A pilot flying with automation in busy terminal airspace should:

- A. Disable the autopilot always
- B. Rely solely on automation
- C. Ignore ATC
- D. Use automation to manage workload while maintaining awareness and ATC compliance

60. The fundamental goal of navigation and automation management is to:

- A. Maximize speed

B. Minimize fuel

C. Eliminate the pilot

D. Use the navigation and automation systems effectively while the pilot maintains command and situational awareness

Answer Key

1. A — A VOR provides magnetic course (azimuth) guidance to or from the station. It gives lateral course information, not distance or vertical guidance.

2. A — DME provides slant-range distance to the station. It measures the direct line from aircraft to station.

3. C — An ILS provides lateral guidance from the localizer and vertical guidance from the glide slope. The glide slope supplies the descent path.

4. D — GPS provides worldwide, continuous position information independent of ground stations. This independence is a key advantage.

5. B — RNAV allows an aircraft to fly any desired path within its navigation coverage. It is not limited to flying to or from ground NAVAIDs.

6. D — WAAS improves GPS by providing correction signals that improve accuracy and integrity. This enables vertically guided approaches.

7. C — With normal sensing and the CDI deflected left, the pilot turns left toward the needle. The rule is to turn toward the needle.

8. A — To intercept a VOR course, the pilot sets the OBS, determines position relative to the course, and turns to an intercept heading at a reasonable angle. The intercept angle closes on the course.

9. C — The localizer CDI is about four times more sensitive than a VOR. The narrower course demands smoother corrections.

10. D — A DME arc is maintained by flying short segments and turning to hold the distance. Holding a single heading would drift off the arc.

11. A — An autopilot maintains commanded attitudes, headings, altitudes, or courses. It relieves the pilot of continuous manual control.

12. D — A flight director displays command guidance cues the pilot or autopilot follows. It shows what to do, not the aircraft state alone.

13. B — Mode awareness means knowing which modes are engaged and what the automation is doing. It prevents mode confusion.

14. D — A risk of over-reliance on automation is erosion of manual flying skills and reduced situational awareness. The pilot may fall behind the aircraft.

15. A — Automation management is knowing when and how to use automation, and when to hand-fly. It is balanced use.

16. B — In heading mode, the autopilot turns to and holds the selected heading. It follows the heading bug.

17. C — In navigation (NAV) mode, the autopilot tracks the selected navigation course. It follows the active course.

18. C — Altitude hold makes the autopilot maintain the current altitude. It holds the captured altitude.

19. D — A coupled approach is one in which the autopilot flies the approach guidance (localizer/glide slope or LPV). The automation tracks the approach.

20. A — During a coupled approach, the pilot must monitor the modes and tracking, ready to take over. Supervision remains essential.

21. B — A moving-map display shows the aircraft's position relative to the route, fixes, and terrain. This improves situational awareness.

22. B — An FMS manages the flight plan, navigation sources, and performance. It integrates the navigation function.

23. C — The pilot must verify the autopilot's commanded action matches the pilot's intent and the flight plan. The automation does what it is told.

24. D — Recognizing the autopilot is not capturing the localizer, the pilot takes manual control and reassesses. Waiting or increasing authority would not fix a capture failure.

25. C — The GPS CDI sensitivity transition from enroute to approach is analogous to a localizer near the runway. Both tighten as the runway nears.

26. B — Delegating routine tasks to the autopilot frees attention for higher-priority tasks. It manages workload.

27. B — The automation is cross-checked against raw data because it can be misprogrammed or fail. Verification catches errors.

28. C — An autopilot disconnect requires resuming manual control and continuing to fly the aircraft. The pilot takes over.

29. B — Programming a direct-to, the pilot verifies the correct fix is selected and the course is sensible. This prevents navigating to the wrong point.

30. B — Flying with the flight director, the pilot follows the command guidance while monitoring the raw data. The raw data confirms the commands.

31. A — The autopilot follows what it is commanded, so an incorrect entry results in the aircraft flying the incorrect command. Garbage in, garbage out.
32. B — Transitioning to an approach, the pilot ensures the navigation source is set to the correct approach (localizer or GPS approach mode). The right source must be active.
33. C — The autopilot's vertical modes include altitude hold, vertical speed, and an airspeed/pitch or captured-altitude mode. These control the vertical path.
34. C — The autopilot's lateral modes include heading, navigation, and approach (localizer/back course). These control the lateral path.
35. A — During an altitude capture, the pilot monitors to ensure the autopilot levels at the selected altitude. A failed capture would overshoot.
36. A — Recognizing mode confusion, the pilot reverts to a lower level of automation or hand-flies to regain control. Simplifying restores clarity.
37. C — A VOR is identified by its Morse code identifier. Positive identification confirms the station.
38. B — A GPS used for IFR must have a current database. Currency is required for IFR navigation.
39. A — Flying a coupled ILS, the pilot briefs the missed approach and is prepared to disconnect the autopilot and hand-fly the go-around. The pilot executes the missed approach.
40. B — The fundamental principle of automation use is that the pilot remains in command and responsible, using automation as a tool. Automation does not transfer command.
41. B — Intercepting a course in NAV mode, the pilot verifies the autopilot captures and tracks the course. Capture confirms the mode is working.

42. C — The proper CDI source must be selected so the autopilot in NAV mode tracks the intended navigation source. The source selection drives the tracking.
43. A — Flying a coupled LPV, the autopilot descends along the glidepath to the decision altitude. LPV is flown to a DA.
44. D — Recognizing the autopilot is mistrimming or behaving abnormally, the pilot disconnects it and hand-flies. Removing the malfunction restores control.
45. B — Using a moving map, the pilot must cross-check with other navigation and avoid fixation. The map supplements, not replaces, the scan.
46. D — Flying with automation in IMC, the pilot maintains situational awareness and a disciplined scan, including the automation status. Monitoring the automation is part of the scan.
47. D — Transitioning to manual flight after autopilot use, the pilot should be prepared for an increased workload requiring active control. Hand-flying demands more attention.
48. A — The autopilot must be certified and approved for the operation, such as a coupled approach within its limitations. Operations must stay within approved limits.
49. D — Flying a back-course localizer with the autopilot, the pilot selects the back-course (BC) approach mode to avoid reverse sensing. The BC mode corrects the sensing.
50. C — The pilot verifies the active and armed modes on the flight mode annunciator to maintain mode awareness. The annunciator shows the automation's state.
51. C — Recognizing the automation captured the wrong altitude, the pilot corrects the selection or takes manual control. The error must be fixed.
52. A — Integrating multiple navigation sources, the pilot ensures the correct source is selected and identified for the segment. The right source must be active and verified.

53. A — The pilot avoids complacency by actively monitoring and verifying the automation's performance. Vigilance prevents automation-induced errors.

54. B — On a long enroute segment, the autopilot reduces fatigue while the pilot maintains oversight. Monitoring continues even with the autopilot engaged.

55. D — Recognizing an unexpected autopilot maneuver, the pilot first disconnects and takes manual control. Removing the automation stops the unwanted action.

56. A — The autopilot is a tool that reduces workload but requires monitoring and does not replace pilot judgment. It assists, but the pilot decides.

57. D — Flying an approach, the pilot ensures the navigation receiver and autopilot are configured for the specific approach being flown. The configuration must match the approach.

58. C — Using GPS direct-to, the pilot monitors the course, distance, and waypoint sequencing. These confirm the navigation is proceeding correctly.

59. D — In busy terminal airspace, the pilot uses automation to manage workload while maintaining awareness and ATC compliance. Automation aids, but awareness and compliance remain.

60. D — The fundamental goal is to use the navigation and automation systems effectively while the pilot maintains command and situational awareness. The pilot stays in charge, using the tools well.