

DGCA CPL Practice Paper 12

Radio Navigation & Instruments

QUESTION PAPER

2026-reviewed sectional practice. Not an official DGCA paper or a verified full-length latest-pattern mock.

25 MCQs • 25 marks • Suggested practice time: 40 minutes

Choose one answer. Practice scoring: +1 correct; 0 incorrect or blank. Count, timing and scoring are editorial practice settings, not a verified official exam pattern. Navigation practice: an appropriate scientific calculator or navigation computer may be used. Use the stated assumptions.

Name: _____ Date: _____ Score: ____ / 25

01. A VOR receiver shows radial 270 degrees. Where is the aircraft relative to the station?

- | | |
|-------------------------|-------------------------|
| A. West of the station | B. North of the station |
| C. South of the station | D. East of the station |

02. An aircraft on the 030-degree VOR radial wants to track directly away from the station. The required magnetic track is:

- | | |
|----------------|----------------|
| A. 120 degrees | B. 030 degrees |
| C. 210 degrees | D. 300 degrees |

03. An aircraft on the 240-degree radial selects course 060 degrees on a conventional VOR indicator. With the CDI centred, the expected flag is:

- | | |
|--|---------|
| A. A glideslope warning | B. TO |
| C. OFF solely because the course is reciprocal | D. FROM |

04. A conventional VOR CDI has a nominal full-scale deflection of 10 degrees. A two-degree error corresponds to approximately:

- | | |
|---------------------------------------|--------------------------------|
| A. One-fifth of full-scale deflection | B. Twice full-scale deflection |
| C. One-half of full-scale deflection | D. Full-scale deflection |

05. At 60 NM from a VOR, a one-degree angular error gives an approximate lateral displacement of:

- | | |
|-----------|----------|
| A. 0.1 NM | B. 10 NM |
| C. 6 NM | D. 1 NM |

06. An ADF displays relative bearing 250 degrees while magnetic heading is 140 degrees. Magnetic bearing TO the station is:

- | | |
|----------------|----------------|
| A. 110 degrees | B. 250 degrees |
| C. 390 degrees | D. 030 degrees |

07. A station bears 320 degrees magnetic and the aircraft heading is 050 degrees magnetic. Relative bearing is:

- | | |
|----------------|----------------|
| A. 270 degrees | B. 370 degrees |
| C. 090 degrees | D. 010 degrees |

08. An aircraft heads 090 degrees magnetic; the ADF needle points directly behind. Magnetic bearing TO the station is:

- A. 090 degrees
- B. 180 degrees
- C. 270 degrees
- D. 000 degrees

09. Why can NDB homing in a crosswind produce a curved ground track?

- A. Homing automatically provides the correct wind-correction angle
- B. NDB bearings always point to true north
- C. A crosswind cancels all radio reception
- D. Keeping the nose pointed at the station does not compensate for drift

10. NDB bearing errors near thunderstorms may occur because:

- A. The receiver can respond to electrical interference
- B. All NDB transmissions become satellite signals
- C. Only the altimeter is affected by lightning
- D. A thunderstorm always reverses magnetic north

11. An aircraft is 3 NM horizontally from a DME station and 4 NM above its antenna. Ideal DME indication is:

- A. 4 NM
- B. 7 NM
- C. 5 NM
- D. 3 NM

12. A DME-derived ground-speed display is most representative of actual ground speed when the aircraft is:

- A. Passing abeam at minimum range
- B. Circling the station at constant range
- C. Climbing vertically above the station
- D. Tracking directly towards or away from the station at nearly constant altitude

13. A radio altimeter principally measures height above:

- A. The terrain or surface directly below
- B. The departure aerodrome pressure datum
- C. Mean sea level in every case
- D. The standard-pressure level of 1013.25 hPa

14. With normal localizer sensing on an inbound ILS front course, the localizer needle is left of centre. The aircraft is:

- A. Left of the centreline
- B. Necessarily below the glide path
- C. Right of the localizer centreline
- D. Exactly on the centreline

15. On an established ILS approach, a normal glideslope pointer above centre indicates that the aircraft is:

- A. Beyond the runway in every case
- B. Below the glide path
- C. Above the glide path
- D. Right of the localizer

16. An ILS localizer signal is primarily carried in which band?

- A. LF
- B. HF
- C. VHF
- D. ELF

17. Primary surveillance radar detects aircraft principally by:

- A. Reading only aircraft transponder replies
- B. Receiving reflected radio energy
- C. Measuring engine noise
- D. Receiving only GNSS coordinates

18. Secondary surveillance radar differs from primary radar because it normally requires:
- A. An ADF tuned to an NDB
 - B. An operating aircraft transponder
 - C. A working radio altimeter only
 - D. A metal runway under the aircraft
19. Mode C transponder information primarily adds:
- A. True airspeed
 - B. Cabin temperature
 - C. Pressure altitude
 - D. Fuel remaining
20. ADS-B Out is described as dependent surveillance because its broadcast position depends on:
- A. Onboard navigation-derived position information
 - B. A primary radar echo being received first
 - C. A voice report from every passenger
 - D. A ground-based NDB at each waypoint
21. RAIM in a GNSS receiver is primarily concerned with:
- A. Replacing every satellite clock with a magnetic compass
 - B. Increasing engine thrust
 - C. Monitoring the integrity of the navigation solution
 - D. Measuring runway friction
22. Poor satellite geometry can degrade a GNSS solution even with usable signals because:
- A. Signal strength alone guarantees position accuracy
 - B. Measurement errors are amplified by the geometry
 - C. Every satellite must be directly overhead
 - D. GNSS requires all satellites to lie on one line
23. An inertial navigation system can provide navigation without continuous external radio signals, but its errors generally:
- A. Remain exactly zero indefinitely
 - B. Disappear when the aircraft turns
 - C. Depend only on radio volume
 - D. Accumulate with time unless corrected or updated
24. A conventional heading indicator must be periodically checked against a suitable magnetic reference because of:
- A. Gyroscopic drift and other heading errors
 - B. A requirement for the instrument always to show true north
 - C. Its dependence on runway lights
 - D. Direct measurement of wind direction
25. A serviceable instrument display shows a navigation warning flag. The appropriate interpretation is:
- A. The aircraft must be exactly overhead the station
 - B. The warning can always be removed by turning the volume down
 - C. The displayed course is guaranteed correct
 - D. Displayed guidance may be invalid and needs cross-checking