

DGCA CPL Practice Paper 11

Air Navigation - Route Planning

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 round trip consists of two 120 NM legs. Ground speeds are 120 kt outbound and 80 kt inbound. Average ground speed for the whole trip is:

- A. 90 kt
- B. 100 kt
- C. 110 kt
- D. 96 kt

02. For a 300 NM route, ground speed towards destination is 120 kt and ground speed returning to departure is 180 kt. The equal-time point is how far from departure?

- A. 200 NM
- B. 120 NM
- C. 150 NM
- D. 180 NM

03. Usable endurance after protecting the stated reserve is 4 hours. Outbound ground speed is 120 kt and homeward ground speed is 180 kt. Point-of-no-return distance from departure is:

- A. 360 NM
- B. 288 NM
- C. 480 NM
- D. 240 NM

04. After 50 NM along track, an aircraft is 2 NM right of its intended track. There are 100 NM left along track. Approximate heading correction to reach destination is:

- A. 1.2 degrees right
- B. 3.6 degrees left
- C. 4.8 degrees right
- D. 2.4 degrees left

05. A wind of 30 kt makes a 60-degree angle with the intended track from ahead. Use $\cos 60 = 0.5$ and $\sin 60 = 0.866$. Its components are approximately:

- A. 15 kt headwind and 26 kt crosswind
- B. 15 kt tailwind and 26 kt crosswind
- C. 30 kt headwind and no crosswind
- D. 26 kt headwind and 15 kt crosswind

06. An aircraft has a TAS of 130 kt and is tracking perpendicular to a 50 kt wind. After fully correcting drift, ground speed is:

- A. 120 kt
- B. 180 kt
- C. 80 kt
- D. 130 kt

07. A 90 NM leg is planned at 135 kt. Actual ground speed is 108 kt throughout. Arrival delay relative to plan is:

- A. 10 minutes
- B. 15 minutes
- C. 20 minutes
- D. 5 minutes

08. Two aircraft fly in the same direction on the same track. The follower is 24 NM behind and gains at 40 kt. Catch-up time is:

- A. 16 minutes
- B. 60 minutes
- C. 24 minutes
- D. 36 minutes

09. Longitude changes by 12 degrees towards the east. Local mean time changes by:

- A. 48 minutes earlier
- B. 12 minutes later
- C. 3 hours later
- D. 48 minutes later

10. At 1200 UTC, local mean time at longitude 37 degrees 30 minutes east is:

- A. 1530
- B. 1430
- C. 1230
- D. 0930

11. A flight crosses 180 degrees longitude westbound. When converting to the local civil date, the usual International Date Line convention is to:

- A. Add exactly one hour only
- B. Keep the date unchanged in every case
- C. Add one day
- D. Subtract one day

12. Two positions on the same meridian are 12 degrees 20 minutes north and 14 degrees 05 minutes north. Approximate north-south distance is:

- A. 85 NM
- B. 145 NM
- C. 105 NM
- D. 125 NM

13. An aircraft has 96 L usable fuel and consumes 24 L/h. Protecting a specified 24 L reserve, maximum planned flying time before using that reserve is:

- A. 3 hours
- B. 3.5 hours
- C. 4 hours
- D. 2 hours

14. Fuel burn rises from 30 L/h to 36 L/h while usable fuel remains fixed. Endurance becomes what fraction of its previous value?

- A. Unchanged
- B. One-half
- C. Six-fifths
- D. Five-sixths

15. A 240 NM route is flown at 120 kt with fuel flow 28 L/h. Adding a stated 25% contingency on trip fuel only gives:

- A. 84 L
- B. 56 L
- C. 70 L
- D. 63 L

16. A chart distance of 5 cm represents 25 km. The chart scale is:

- A. 1:50,000
- B. 1:5,000,000
- C. 1:250,000
- D. 1:500,000

17. At which latitude is one degree of longitude approximately 30 NM?

- A. The poles exactly
- B. 30 degrees north or south
- C. 60 degrees north or south
- D. The equator only

18. On a Lambert conformal conic chart, meridians are generally represented as:

- A. Random curves with no geometric relation
- B. Concentric circles
- C. Straight lines converging towards a common apex
- D. Parallel vertical lines everywhere

19. A great-circle route plotted over a long distance generally requires true track to:
- A. Remain exactly east or west
 - B. Change along the route, except special cases
 - C. Remain constant on every route
 - D. Equal magnetic heading throughout
20. A true course is 012 degrees and variation is 15 degrees west. Magnetic course is:
- A. 027 degrees
 - B. 357 degrees
 - C. 003 degrees
 - D. 192 degrees
21. Compass heading is 188 degrees with deviation 4 degrees west. Magnetic heading is:
- A. 008 degrees
 - B. 184 degrees
 - C. 188 degrees
 - D. 192 degrees
22. The shortest angular difference between bearings 355 degrees and 015 degrees is:
- A. 340 degrees
 - B. 10 degrees
 - C. 30 degrees
 - D. 20 degrees
23. During a climb, ground speed is 100 kt and rate of climb is 500 ft/min. Approximate climb gradient is:
- A. 600 ft/NM
 - B. 300 ft/NM
 - C. 500 ft/NM
 - D. 200 ft/NM
24. An aircraft at 9,000 ft must reach 3,000 ft using 300 ft/NM. Ignoring deceleration and level segments, descent distance is:
- A. 20 NM
 - B. 10 NM
 - C. 18 NM
 - D. 30 NM
25. Position fixes disagree with the dead-reckoning estimate. The most useful first response is to:
- A. Assume the planned wind cannot be wrong
 - B. Discard every navigation aid automatically
 - C. Cross-check fix identification, time and wind assumptions
 - D. Average all positions without checking their validity