

DGCA CPL Practice Paper 17

Technical General - Principles of Flight

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. Attempt this set without a calculator. Use the stated assumptions.

Name: _____ Date: _____ Score: ____ / 25

01. For a given wing, air density and lift coefficient, reducing speed to 80% of its original value changes lift to:

- | | |
|-------------------------|-------------------------|
| A. 160% of the original | B. 64% of the original |
| C. 80% of the original | D. 125% of the original |

02. If aircraft mass is reduced to 81% of its former value, stalling speed at the same load factor and configuration becomes:

- | | |
|----------------------------|-----------------------------|
| A. Unchanged | B. 111% of its former value |
| C. 90% of its former value | D. 81% of its former value |

03. In a coordinated level turn, increasing bank angle requires:

- | | |
|---|--|
| A. A decrease in total lift below weight | B. Zero centripetal acceleration |
| C. An increase in total lift to maintain altitude | D. No change in lift at any bank angle |

04. For the same bank angle in a coordinated level turn, increasing true airspeed generally causes turn radius to:

- | | |
|-------------|---------------------|
| A. Increase | B. Remain unchanged |
| C. Decrease | D. Become zero |

05. For the same bank angle, increasing true airspeed in a coordinated level turn generally causes rate of turn to:

- | | |
|----------------------------|-------------------------------|
| A. Increase | B. Decrease |
| C. Remain exactly constant | D. Become equal to bank angle |

06. A slip-skid ball displaced from centre in a turn indicates:

- | | |
|---|--|
| A. That the altimeter setting is wrong | B. A direct measurement of angle of attack |
| C. Unbalanced lateral acceleration relative to the instrument | D. The aircraft's exact true heading |

07. The aerodynamic centre of a subsonic aerofoil is the point about which pitching moment is approximately:

- | | |
|--|---|
| A. Independent of aerofoil shape in every case | B. Constant with changes in angle of attack within the relevant range |
| C. Always zero at every speed | D. Equal to total aircraft weight |

08. Aspect ratio for a rectangular wing is:

- A. Chord divided by span
- B. Wing area divided by engine power
- C. Span multiplied by aircraft mass
- D. Span divided by chord

09. For comparable lift and span efficiency, a higher wing aspect ratio generally reduces:

- A. The need for directional control
- B. Aircraft weight to zero
- C. All skin friction to zero
- D. Induced drag coefficient

10. Winglets are used mainly to improve aerodynamic efficiency by modifying:

- A. Magnetic variation
- B. Wingtip flow and associated induced drag
- C. Fuel chemistry
- D. Static pressure in the altimeter case

11. Washout means the wing tip has a lower geometric incidence than the root. One common purpose is to:

- A. Increase magnetic heading accuracy
- B. Remove all need for ailerons
- C. Guarantee the tip stalls first
- D. Encourage the root to stall before the tip

12. A boundary layer is the region near a surface where:

- A. Only supersonic flight can occur
- B. Air contains no molecules
- C. Pressure is always exactly zero
- D. Viscous effects cause air velocity to change from the surface value towards the outer flow

13. A turbulent boundary layer generally has greater resistance to separation than a laminar one because it:

- A. Mixes higher-momentum air towards the surface
- B. Contains no friction
- C. Has zero velocity everywhere
- D. Eliminates the adverse pressure gradient

14. An adverse pressure gradient means pressure:

- A. Changes only with magnetic latitude
- B. Increases in the direction of airflow
- C. Decreases in the direction of airflow
- D. Is zero everywhere

15. Critical Mach number is the free-stream Mach number at which:

- A. The whole aircraft necessarily travels at Mach 1
- B. Every shock wave disappears
- C. The engine must stop
- D. Local airflow first reaches Mach 1 somewhere on the aircraft

16. Mach number is the ratio of true airspeed to:

- A. Ground speed
- B. Local speed of sound
- C. Indicated airspeed
- D. Rate of climb

17. At a constant true airspeed, entering colder air generally causes Mach number to:

- A. Remain unchanged regardless of temperature
- B. Increase
- C. Decrease
- D. Become zero

18. Sweeping a wing back helps delay some compressibility effects mainly by reducing:

- A. All aircraft speed to zero
- B. The local speed of sound
- C. Gravity acting on the wing
- D. The component of airflow normal to the leading edge

19. A spin is associated with:

- | | |
|--|--|
| A. A stalled wing condition and autorotation | B. Any normal coordinated turn regardless of angle of attack |
| C. A magnetic compass swinging during taxi | D. Only a high-speed dive with unstalled wings |

20. A spiral dive differs from a developed spin in that the wings in a spiral dive are generally:

- | | |
|--|--|
| A. Not stalled, with speed tending to increase | B. Producing no lift at all |
| C. Always level | D. Necessarily beyond critical angle of attack |

21. A forward CG shift, within limits, generally requires a conventional tail-aft aeroplane to produce:

- | | |
|-------------------------------------|---------------------------------------|
| A. More tail-down force for balance | B. Less total wing lift in every case |
| C. Zero elevator movement | D. No tail force under any condition |

22. An aircraft loaded beyond the aft CG limit may have reduced:

- | | |
|---|---------------------------|
| A. Radio transmitter frequency | B. Only passenger legroom |
| C. Longitudinal stability and recovery margin | D. Magnetic deviation |

23. A trim tab normally changes the control force needed by:

- | | |
|---|---|
| A. Directly changing fuel density | B. Moving the aircraft's magnetic poles |
| C. Creating an aerodynamic moment on the main control surface | D. Replacing the main control surface with a radio signal |

24. A servo tab differs in function from a simple trim tab because it is designed mainly to:

- | | |
|--|----------------------------|
| A. Aerodynamically assist movement of the main control surface | B. Measure static pressure |
| C. Store hydraulic fluid | D. Provide cabin heating |

25. Spoiler deployment on one wing can assist roll by:

- | | |
|---------------------------------|---|
| A. Changing engine firing order | B. Turning the rudder without linkage |
| C. Reducing lift on that wing | D. Increasing lift on that wing in every case |