

DGCA CPL Practice Paper 13

Meteorology - Atmospheric Processes

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. The standard atmosphere assumes a sea-level temperature of:

- A. 15 degrees C
- B. 25 degrees C
- C. 20 degrees C
- D. 0 degrees C

02. Using an ISA lapse rate of 2 degrees C per 1,000 ft, temperature at 10,000 ft is approximately:

- A. Minus 20 degrees C
- B. Minus 5 degrees C
- C. Plus 10 degrees C
- D. Plus 5 degrees C

03. Environmental lapse rate describes the temperature change with height in:

- A. The surrounding atmosphere
- B. Only a descending saturated parcel
- C. The aircraft cabin
- D. Only an individual rising parcel

04. If environmental cooling with height exceeds the dry adiabatic lapse rate, an unsaturated displaced parcel is generally:

- A. Absolutely stable
- B. Unable to rise under any condition
- C. Always neutrally stable
- D. Unstable

05. Conditional instability exists when the environmental lapse rate is:

- A. Less than both adiabatic lapse rates in every case
- B. Exactly zero only
- C. Between the saturated and dry adiabatic lapse rates
- D. Negative in every case

06. An isothermal layer has:

- A. Temperature rising with increasing height
- B. Constant pressure with increasing height
- C. Temperature falling at the dry adiabatic rate
- D. Constant temperature with increasing height

07. Water evaporating into unsaturated air tends to cool that air because evaporation:

- A. Absorbs latent heat
- B. Releases latent heat to the air
- C. Converts oxygen into nitrogen
- D. Always increases air pressure

08. A wet-bulb thermometer normally reads below the dry-bulb temperature in unsaturated air because of:

- A. Solar radiation being stronger on the dry bulb in every case
- B. A change in gravity
- C. Evaporative cooling
- D. Compression heating

09. When dry-bulb and wet-bulb temperatures are equal under proper measurement conditions, relative humidity is approximately:

- A. 50%
- B. 0%
- C. 100%
- D. 25%

10. Mixing ratio is commonly expressed as the mass of water vapour per unit mass of:

- A. Aircraft fuel
- B. Precipitation
- C. Dry air
- D. Liquid cloud water only

11. The tropopause is generally higher over:

- A. All oceans at exactly the same height
- B. Every desert at sea level
- C. The poles than the tropics
- D. The tropics than the poles

12. Most atmospheric water vapour is concentrated in the:

- A. Thermosphere
- B. Lower troposphere
- C. Upper mesosphere
- D. Exosphere

13. At the same temperature, raising atmospheric pressure generally causes air density to:

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

14. Pressure gradient force acts approximately:

- A. From lower towards higher pressure
- B. From higher towards lower pressure
- C. Vertically upward only
- D. Along an isobar only

15. In the Southern Hemisphere, Coriolis deflection is towards the:

- A. Equator in every case
- B. North in every case
- C. Right of the motion
- D. Left of the motion

16. Coriolis effect on horizontal motion is weakest at the:

- A. Latitude 60 degrees
- B. South Pole
- C. Equator
- D. North Pole

17. A land breeze near the coast is most likely to blow:

- A. From sea towards land at night in every case
- B. From sea towards land because land always remains warmer
- C. Vertically upward only
- D. From land towards sea at night

18. An anabatic wind is typically:

- A. A cold downslope drainage wind
- B. A high-altitude polar jet
- C. A rotating tropical cyclone
- D. An upslope wind driven by daytime heating

19. A coastal air mass is carried uphill and cools to saturation. The resulting cloud formation is primarily due to:

- A. Radiative heating from above
- B. Orographic lifting
- C. Compression during descent
- D. Subsidence warming

20. Air descending on the lee side of a mountain often becomes warmer and drier because of:
- A. A complete loss of atmospheric pressure
 - B. Adiabatic compression and a rise in saturation capacity
 - C. Continuous expansion
 - D. Increasing condensation during all descents
21. The freezing level is the altitude at which the atmospheric temperature is:
- A. 15 degrees C
 - B. 0 degrees C
 - C. Equal to the dew point in all conditions
 - D. Minus 40 degrees C
22. Which cloud is normally composed predominantly of ice crystals at high altitude?
- A. Cirrus
 - B. Low stratus
 - C. Fair-weather cumulus at a warm base
 - D. Fog
23. Nimbostratus is most associated with:
- A. Widespread, relatively continuous precipitation
 - B. A cloudless sky
 - C. Only isolated brief fair-weather thermals
 - D. No precipitation under any conditions
24. Virga is precipitation that:
- A. Evaporates or sublimates before reaching the ground
 - B. Falls upward from a runway
 - C. Always reaches the ground as hail
 - D. Forms only inside aircraft cabins
25. A halo around the sun seen through a thin high cloud layer is often associated with:
- A. Dust inside the cockpit
 - B. Liquid rain beneath warm stratus only
 - C. Ice crystals in cirrostratus
 - D. A guaranteed thunderstorm within one minute