# METEOROLOGY
# 050

**1 Below the tropopause, the ICAO Standard Atmosphere (ISA) assumes?**

[A] A mean sea level pressure of 1225g/m³ together with a mean sea level temperature of 15°C, decreasing at a rate of 2°C per 1.000ft up to 36 090ft.
[B] A mean sea level pressure of 1013.25 hPa together with a mean sea level temperature of 15°C, decreasing by 1.98°C per 1000ft up to 36 090ft.
[C] A surface pressure of 1013.25 hPa together with a sea level temperature of 15°C, decreasing at the rate of 1.98°C per 1.000ft until it reaches absolute zero.
[D] A mean sea level pressure of 1013.25 hPa together with a mean sea level temperature of 15°C, decreasing at a rate of 2°C per 1000ft until it reaches -65.6°C at 36 090ft.

**2 Where is most of the water vapour in the atmosphere contained?**

[A] Stratopause.
[B] Troposphere.
[C] Tropopause.
[D] Stratosphere.

**3 What are the proportions of gases in the atmosphere?**

[A] Oxygen 21%, Nitrogen 78%, other gasses 1%.
[B] Nitrogen 78%, Argon 21%, Oxygen 1%.
[C] Nitrogen 78%, Oxygen 21%, Hydrogen 1%.
[D] Oxygen 21%, Hydrogen 78%, other gasses 1%.

**4 The layer closest to the earth's surface where the majority of weather is found is called?**

[A] Mesosphere.
[B] Tropopause.
[C] Troposphere.
[D] Stratosphere.

**5 The temperature at 2000ft above mean sea level is forecast to be 5°C; compared to the ICAO Standard Atmosphere (ISA) this is:**

[A] IAS -6.
[B] ISA +5.
[C] IAS +6.
[D] ISA -6.

**6 What is the name of the instrument which gives a continuous printed reading and record of the atmospheric pressure?**

[A] Anemograph.
[B] Hygrometer.
[C] Barograph.
[D] Barometer.

**7 The pressure of the atmosphere:**

[A] Decreases at a constant rate as height increases.
[B] Decreases at an increasing rate as height increases.
[C] Decreases at a constant rate up to the Tropopause and then remains constant.
[D] Decreases at a decreasing rate as height increases.

**8 What is the significance of tightly spaced isobars?**

[A] A weak pressure gradient and strong winds.
[B] A weak pressure gradient and light winds.
[C] A large pressure gradient and light winds.
[D] A large pressure gradient and strong winds.

**9 A line drawn on a chart joining places having the same barometric pressure at the same level and at the same time is?**

[A] An isohypse.
[B] An isobar.
[C] An isallobar.
[D] An isotherm.

**10 Compared to ISA, what does warm air do to the distance represented by a 1 hpa change in pressure?**

[A] Nothing.
[B] Impossible to determine.
[C] Increases it.
[D] Decreases it.

**11 What is the density at sea level in the International Standard Atmosphere?**

[A] 12,25g/m³.
[B] 1225g/m³.
[C] 122,5g/m³.
[D] 1,225g/m³.

**12 Density at the surface will be low when:**

[A] Pressure is low and temperature is high.
[B] Pressure is low and temperature is low.
[C] Pressure is high and temperature is low.
[D] Pressure is high and temperature is high.

**13 Generally as altitude increases:**

[A] Temperature decreases and density increases.
[B] Temperature and pressure increase and density decreases.
[C] Temperature decreases and pressure density increases.
[D] Temperature, pressure and density decreases.

**14 What is density defined as?**

[A] Mass per unit volume.
[B] Weight of air per unit area.
[C] Volume divided by mass.
[D] Mass per unit area.

**15 Under what conditions would density be the least at any given place?**

[A] High altitude, high temperature and high humidity.
[B] Low altitude, high temperature and high humidity.
[C] Low altitude, low temperature and low humidity.
[D] High altitude, high temperature and low humidity.

**16 Consider the following statements about air density and select the one which is correct?**

[A] The effect of change of temperature on the air density is much greater than the effect of change of atmospheric pressure.
[B] At any given surface temperature the air density will be greater in anticyclonic conditions than it will be when the mean sea level pressure is lower.
[C] Air density decreases with increase of height in the International Standard Atmosphere (ISA).
[D] Air density increases with an increase of relative humidity.

**17 The diurnal variation of temperature is:**

[A] Reduced anywhere by the presence of cloud.
[B] Less over desert areas than over temperate grassland.
[C] Increased anywhere as wind speed increases.
[D] Greater over the sea than overland.

**18 If temperature remains constant with an increase in altitude there is:**

[A] An inversion.
[B] An isothermal layer.
[C] Decreased lapse rate.
[D] An isohypse.

**19 A trough of low pressure at the surface is generally associated with:**

[A] Subsidence causing increased cloud and precipitation.
[B] Divergence causing increased cloud and precipitation.
[C] Convergence causing increased cloud and precipitation.
[D] Subsidence causing decreased cloud and precipitation.

**20 During the winter months, which of the following weather conditions would most likely be produced by an anticyclone?**

[A] During the night, as the land cools, there would be an increase in the vertical cloud development.
[B] During the day, the surface warming would create an unstable atmosphere with extensive convective cloud.
[C] Subsidence due to surface cooling creating extensive cloud.
[D] General subsidence with adiabatic warming, clear skies, and an inversion.

**21 Diurnal variation of the surface temperature will:**

[A] Be unaffected by a change of wind speed.
[B] Decrease as wind speed increases.
[C] Be at a minimum in calm conditions.
[D] Increase as wind speed increases.

**22 An area of indeterminate pressure between two lows and two highs is called:**

[A] A saddle.
[B] A ridge.
[C] A trough.
[D] A col.

**23 The method by which energy is transferred from one body to another with which it is in contact is called:**

[A] Latent heat.
[B] Convection.
[C] Radiation.
[D] Conduction.

**24 The sun gives out ____ amounts of energy with ____ wavelengths. The earth gives out relatively ____ amounts of energy with relatively ____ wavelengths:**

[A] Large / large / small / large.
[B] Small / small / large / large.
[C] Large / large / small / small.
[D] Large / small / small / large.

**25 An inversion is when:**

[A] There is no change of temperature with height.
[B] There is a decrease of temperature as height increases.
[C] There is no horizontal gradient of temperature.
[D] There is an increase of temperature as height increases.

**26 Which of the statements below best describes a Col?**

[A] An area of widely spaced isobars between two highs and two lows.
[B] An extension of low pressure.
[C] An extension of high pressure.
[D] An area between two highs where the isobars are very close together.

**27 A ridge of high pressure is generally associated with:**

[A] Divergence at the surface causing an improvement in the surface visibility.
[B] Convergence at the surface causing increased cloud and precipitation.
[C] Subsidence of air, then divergence at the surface causing clear skies and poor visibility.
[D] Subsidence then divergence at the surface causing cloud to break up and more precipitation.

**28 When flying towards a depression at a constant indicated altitude, the true altitude will be:**

[A] The same as indicated.
[B] Lower than indicated at first then the same as indicated later.
[C] Higher than indicated.
[D] Lower than indicated.

**29 When an altimeter sub scale is set to the aerodrome QFE, the altimeter reads:**

[A] The pressure altitude at the aerodrome reference point.
[B] Zero at the aerodrome reference point.
[C] The elevation of the aerodrome at the aerodrome reference point.
[D] The appropriate altitude of the aircraft.

**30 The altimeter will always read:**

[A] With airfield QNH set, the height above the airfield datum.
[B] The vertical distance above the pressure level set in the sub scale.
[C] The correct flight level with regional QFE set.
[D] With 1013 set, the altitude above MSL.

**31 An aircraft flies at a constant indicated altitude from airfield A (QNH 1009 hPa) to airfield B (QNH 1019 hPa). If the subscale is not reset from 1009, what would be expected when over airfield B:**

[A] Indicated altitude to be the same as actual altitude.
[B] Indicated altitude to be more than actual altitude.
[C] Indicated altitude may be greater or less depending on the airfield elevation.
[D] Indicated altitude to be less than actual altitude.

**32 An aircraft flies from aerodrome "A", where QNH is given as 1020 hPa, to aerodrome "B", where the QNH is given as 999 hPa. Aerodrome "A" is 800ft above mean sea level and aerodrome "B" is 500ft above mean sea level. If the altimeter sub scale is not changed from 1020, what is the altimeter indication on landing? (ASSUME 1 hPa = 30ft)**

[A] 100 ft.
[B] 130 ft.
[C] 1.130 ft.
[D] 1.430 ft.

**33 You experience a constant drift to the right when flying over Europe at a constant indicated altitude. If the altimeter subscale is not updated, this will result in?**

[A] Flying at a progressively higher true altitude.
[B] Flying at a progressively lower indicated altitude.
[C] Flying at a progressively higher indicated altitude.
[D] Flying at a progressively lower true altitude.

**34 You are flying at a constant indicated altitude with the QNH of 1015 set within the subscale and you notice the outside air temperature has been falling constantly. What can you expect to have happened to your true altitude?**

[A] Remained the same.
[B] Increased.
[C] Decreased.
[D] Increased then decreased.

**35 The instrument used for measuring the humidity of air is a:**

[A] Hydrometer.
[B] Wet bulb thermometer.
[C] Hygroscope.
[D] Hygrometer.

**36 When condensation takes place, the higher the temperature the ____ the amount of latent heat ____:**

[A] Greater / absorbed.
[B] Lesser / absorbed.
[C] Lesser / released.
[D] Greater / released.

**37 Wet bulb temperature would normally be lower than dry bulb temperature because:**

[A] Condensation causes a release of latent heat.
[B] Of condensation on the muslin wick of the bulb.
[C] Evaporation causes cooling on the wet bulb thermometer.
[D] Latent heat is absorbed by the bulb thermometer.

**38 The process of change of state from a gas to a liquid is known as:**

[A] Evaporation in which latent heat is absorbed.
[B] Evaporation in which latent heat is released.
[C] Condensation in which latent heat is absorbed.
[D] Condensation in which latent heat is released.

**39 A change of state directly from a solid to a vapour or vice versa is:**

[A] Sublimation.
[B] Condensation.
[C] Evaporation.
[D] Insolation.

**40 During a night with a clear sky, surface temperature will ____, relative humidity will ____ and dewpoint will ____.**

[A] Fall / Rise / Rise.
[B] Fall / Fall / Remain the same.
[C] Rise / Rise / Fall.
[D] Fall / Rise / Remain the same.

**41 Which of the processes listed below can cause air to become saturated?**

[A] Evaporation.
[B] Melting.
[C] Heating.
[D] Condensation.

**42 Given an atmospheric situation where the relative humidity is 60% and the ELR is less than the DALR, if air is forced to rise it will be:**

[A] Stable and will tend to regain its former position.
[B] Unstable and will tend to regain its former position.
[C] Unstable and will carry on rising.
[D] Stable and will carry on rising.

**43 The pilot of an aircraft which is approaching a mountain from the downwind or leeward side, a few hundred feet above ridge level, observes venticular clouds. Which of the following conditions would the pilot expect to encounter as the flight continues?**

[A] Strong up-draughts before the ridge is passed and strong down-draughts after the ridge is passed.
[B] Strong katabatic down-draughts and turbulence after passing over the ridge.
[C] Strong down-draughts immediately before the ridge of the mountain is reached, with strong up-draughts after passing the ridge to the windward side.
[D] Strong katabatic currents at the top of the ridge.

**44 The actual change of temperature with height is known as:**

[A] The environmental lapse rate.
[B] The temperature curve.
[C] The tephigram.
[D] The adiabatic lapse rate.

**45 Which of the following is true about the lowest level windshear?**

[A] It is rare where there is a strong inversion level close to the surface.
[B] It is only found under the core of the anvil of a thunderstorm.
[C] It may be experienced 15 to 20 miles ahead of a fast moving thunderstorm.
[D] It is only ever found on the fringes of a microburst.

**46 An aircraft is flying in the vicinity of a range of hills, lying north-south, across which a wind is blowing from the west to east. Which of the following situations might cause the aircraft to encounter dangerous downdraughts?**

[A] When flying south towards the hill from the north.
[B] When flying west towards the hills from the east.
[C] When flying east towards the hills from the west.
[D] When flying north towards the hill from the south.

**47 In a mountain wave situation, the worst of the turbulence is most likely to be found when flying:**

[A] In or just below the roll cloud.
[B] At about mid-height between the lenticular and roll cloud.
[C] In the lenticular cloud.
[D] In the cap cloud.

**48 A light aircraft flying at low level near a mountain range across which a strong wind is blowing may expect:**
**1. Severe turbulence below or within any rotor zone.**
**2. Down-draughts which may exceed the climb rate of the aircraft.**
**3. A greater than normal risk of icing in the cloud over the crest mountain.**
**4. Lenticular cloud**

[A] Only 1, 2 and 4 are correct.
[B] 1,2, 3 and 4 are correct.
[C] Only 1 and 3 are correct.
[D] Only 1 and 2 are correct.

**49 One or more coloured rings around the sun or moon may indicate the presence of which type of cloud?**

[A] Cumulus or stratocumulus.
[B] Cirrocumulus or cumulus.
[C] High.
[D] Altostratus or cirrostratus.

**50 Given a surface temperature of +21°C and a dew point of +7°C, at approximately what height will the cloud base of a cumulus cloud be?**

[A] 4.000ft.
[B] 56.000ft.
[C] 560ft.
[D] 5.600ft.

**51 Hail is most likely to fall from which type of cloud?**

[A] CB.
[B] AC.
[C] AS.
[D] NS.

**52 From the list below, select the Low, Medium and High clouds in ascending order.**

[A] Cirrus, Cumulonimbus, Stratus.
[B] Nimbostratus, Cumulonimbus, Cirrus.
[C] Altostratus, Altocumulus, Cirrus.
[D] Stratus, Altocumulus, Cirrus.

**53 The use of the suffix "nimbus" or the prefix "nimbo" means?**

[A] Wispy, detached or fiberous.
[B] Dark and threatening.
[C] Rain bearing.
[D] Medium cloud.

**54 Precipitation produced by stratus is normally?**

[A] Heavy rain.
[B] Heavy showers.
[C] Drizzle.
[D] Light showers.

**55 Unstable air is forced to rise up the side of a mountain. What weather might you expect to see on the windward slopes?**

[A] Thick stratiform cloud, probably nimbostratus.
[B] Cap clouds with possible altocumulus lenticularis.
[C] Cloud of extensive vertical development.
[D] None, as the air will subside and warm adiabatically after passing over the summit.

**56 The conditions which must exist to allow thunderstorms to develop are:**

[A] A steep lapse rate, a stable atmosphere through a large vertical extent, and a plentiful supply of moisture.
[B] A trigger action, a plentiful supply of moisture and a very stable atmosphere.
[C] A plentiful supply of moisture and a steep lapse rate through a large vertical extent, together with a trigger action.
[D] A steep lapse rate through a large vertical extent, a low relative humidity and a trigger action.

**57 Which of the following combinations of weather-producing variables would be most likely to result in cumuliform clouds, good visibility, showery rain, and possible clear type icing in clouds?**

[A] Unstable moist air and orographic lifting.
[B] Stable, moist air and orographic lifting.
[C] Unstable moist air and no lifting mechanism.
[D] Stable, dry air and orographic lifting.

**58 During the ____ stage of a thunderstorm ceil, the cloud contains ____. Complete the above statement choosing one of the following combinations of words:**

[A] Initial / down currents only.
[B] Mature / up currents and down currents.
[C] Dissipating / up currents and down currents.
[D] Initial /up currents and down currents.

**59 What stage of a thunderstorm is characterised predominantly by downdraughts?**

[A] Initial stage.
[B] Dissipating stage.
[C] Cumulus stage.
[D] Mature stage.

**60 For cumulonimbus clouds to develop, there needs to exist:**

[A] A shallow layer of very unstable air with a steep lapse rate.
[B] A deep layer of very unstable moist air.
[C] A shallow layer of very unstable moist air.
[D] A deep layer of very unstable moist air with a shallow lapse rate.

**61 What stage of a thunderstorm is characterised by updraughts only?**

[A] Mature stage.
[B] Dissipating stage.
[C] End stage.
[D] Initial stage.

**62 Which of the following conditions are most likely to produce thunderstorms?**

[A] A high moisture content with a shallow lapse rate.
[B] A high moisture content with a steep lapse rate.
[C] A low moisture content with a shallow lapse rate.
[D] A low moisture content with a steep lapse rate.

**63 Hazards to aircraft caused by the presence of cumulonimbus or thunderstorm cloud may be experienced:**

[A] Only when the aircraft is outside the cloud.
[B] When the aircraft is in the vicinity.
[C] Only when the aircraft is within or underneath the cloud.
[D] Only when the aircraft is within the cloud.

**64 Hazards of the mature stage of a thunderstorm cell include lightning, turbulence and:**

[A] Microburst, windshear and anvil.
[B] Icing, drizzle and microburst.
[C] Icing, microburst and windshear.
[D] Windshear, hail and fog.

**65 The wind at 2000 ft over an aerodrome was reported at 330/15kt. Using the rule of thumb, what might you expect the surface wind to be?**

[A] 315/30 kt.
[B] 355/30 kt.
[C] 305/30 kt.
[D] 300/07 kt.

**66 Coriolis force in the Northern Hemisphere will cause moving air to be apparently deflected to:**

[A] The left and cause the wind to blow slightly across the isobars at about 2.000ft agl.
[B] The right and cause the wind to blow slightly across the isobars at about 2.000ft agl.
[C] The right and cause the geostrophic wind to blow parallel to the isobars at about 2.000ft agl.
[D] The left and cause the geostrophic wind to blow parallel to the isobars at about 2.000ft agl.

**67 Winds that blow around an anticyclone (high pressure system) at lower levels in the Northern Hemisphere are represented on a low level chart as blowing in:**

[A] An anticlockwise direction.
[B] A clockwise direction.
[C] A cyclonic direction.
[D] A clockwise direction if it is warm air and anticlockwise if it is cold air.

**68 Low level winds in the northern hemisphere that blow around a depression are drawn on surface weather charts in?**

[A] An anticyclonic direction.
[B] Either clockwise or anticlockwise depending on whether the depression is cyclonic or anticyclonic.
[C] An anticlockwise direction.
[D] A clockwise direction.

**69 The formation of advection fog is often caused by?**

[A] A cold moist air mass under the influence of a moderate wind being warmed to below its dew point by flowing over a much warmer surface.
[B] A warm moist air mass under the influence of a moderate wind being cooled to below its dew point by flowing over a much colder surface.
[C] A warm moist air mass under the influence of a very light wind being cooled to below its dew point by flowing over a much colder surface.
[D] A warm moist air mass under the influence of a strong wind on a clear cloudless night.

**70 A low level mist layer significantly reduces forward visibility when flying at about 2000ft. To improve your forward visibility you should:**

[A] Turn on your landing lights and strobe lights.
[B] Fly just on top of the mist layer.
[C] Fly lower.
[D] Fly higher.

**71 Which of the following conditions is most favourable to the formation of radiation fog?**

[A] Low relative humidity, light winds and a clear sky.
[B] High relative humidity, moderate wind and a cloudy sky.
[C] High relative humidity, light winds and a clear sky.
[D] High relative humidity, light winds and a cloudy sky.

**72 Over an inland airfield radiation fog is reported in the morning. As the wind speed increases to 10 kt what would you expect?**

[A] The fog to lift and form low stratus.
[B] The fog to thicken.
[C] An increase in mixing, allowing more fog to develop.
[D] The fog to dissipate.

**73 What are the characteristics of the passage of a cold front?**

[A] A dew point fall, a temperature fall, and the wind veering.
[B] Steady dew point and temperature but a sharp backing in the wind.
[C] Dew point rise, a temperature fall and the wind veering.
[D] A dew point rise, a temperature fall and wind backing.

**74 If a cloudy, granular type of ice is seen to collect and protrude forward from the leading edge of the aerofoil, what type of ice would it most likely be?**

[A] Rain ice.
[B] Rime ice.
[C] Clear ice.
[D] Hoar ice.

**75 What will normally happen to the surface wind direction following the passage of a warm front?**

[A] Veer.
[B] Stay constant.
[C] Veer then back.
[D] Back.

**76 The extent of rainfall ahead of a typical warm front may be up to a distance of:**

[A] 50 miles ahead of the surface position of the warm front.
[B] 200 miles ahead of the surface position of the warm front.
[C] 500 miles ahead of the surface position of the warm front.
[D] 2 miles ahead of the surface position of the warm front.

**77 Which of the following frontal systems is more likely to produce thunderstorm activity?**

[A] A warm front.
[B] A ridge of high pressure.
[C] A cold front.
[D] A stationery front.

**78 Clear ice forms as a result of:**

[A] Water vapour freezing to the aircraft.
[B] Small supercooled water droplets splashing over the aircraft.
[C] Ice pellets splattering on the aircraft.
[D] Large supercooled water droplets spreading as they freeze.

**79 What would be the change in weather following the passage of a typical warm front?**

[A] Pressure stops falling, 4 oktas of cloud with a very low base and rapidly improving visibility.
[B] Pressure falls, 8 oktas of cloud with a lowering base and improving visibility.
[C] Pressure falls, 8 oktas of cloud with a lowering base and poor visibility.
[D] Pressure increases steadily, no more than 4 oktas of cloud, and good visibility.

**80 What is the main reason water can exist in a liquid state even though the temperature is sub zero?**

[A] No condensation nuclei.
[B] Water takes a long time to cool to below zero degrees.
[C] Water is hygroscopic.
[D] No freezing nuclei.

**81 You are flying above the freezing level in the cold air just ahead of a warm front. If rain were to fall in this area, what kind of icing might you expect?**

[A] Hoar frost.
[B] Rain or clear ice.
[C] Rime ice.
[D] Carburettor ice.

**82 Which of the following correctly decodes the METAR shown below?**
**METAR EGKL 130350Z 32005KT 0900 0400N DZ BCFG VV002**

[A] Observed on the 13th day of the month at 0350Z, surface wind 320°True, 05kt, current visibility 900 metres, minimum visibility 400 metres to the north, moderate drizzle, with fog patches and a vertical visibility of 200ft.
[B] Valid on the 13th day of the month between 0300 and 1500Z, surface wind 320°T/05kt, current visibility 900 metres, minimum visibility 400 metres, drizzle, with fog patches and a vertical visibility of 200 metres.
[C] Valid between 1300Z and 1350Z, surface wind 320°T/05kt, current visibility 900 metres, minimum visibility 400 metres to the north, moderate drizzle, and a vertical visibility of 200ft.
[D] Reported on the 13th day of the month at 0350Z, surface wind 320°Magnetic, 05kt, current visibility 900 metres, minimum visibility 400 metres to the north, moderate drizzle, with fog patches and a vertical visibility of 200ft.

**83 When a TREND is included at the end of an aviation METAR, the trend is a forecast valid for:**

[A] 1 hour after the time of observation.
[B] 30 minutes after it was issued.
[C] 1 hour after it was issued.
[D] 2 hours after the time of observation.

**84 The visibility group R20/0050 in a METAR means:**

[A] As measured by runway measuring equipment for runway 20, a current runway visibility of 50 metres.
[B] On runway 20, the current visibility is less than 5.000 metres.
[C] The runway visibility reported is 50 metres as measured by the runway visual range equipment within the last 20 minutes.
[D] For runway 20, a current visibility of 500 metres measured by runway visual range equipment.

**85 The code "BECMG FM 1100 -SHRA" in a METAR means:**

[A] Becoming, from 1100 UTC to 0000 UTC, slight rain showers.
[B] From 1100 UTC, cessation of the rain showers.
[C] Becoming, from 1100 UTC, rain showers.
[D] Becoming, from 1100 UTC, slight rain showers.

**86 A temperature group of 28/24 in a METAR means that:**

[A] The temperature is 28°C at the time of the reporting, but is expected to become 24°C by the end of the TREND report.
[B] The dew point is 28°C and the temperature is 24°C.
[C] The temperature is 28°C and the dew point is 24°C.
[D] The dry bulb temperature is 28°C and the wet bulb temperature is 24°C.

**87 In the METAR shown below, the cloud base has been omitted. At what height might you expect the cloud base to be if cumulus cloud was present?**

**28005KT9999 SCT??? 12/05 Q1020 NOSIG**

[A] SCT042.
[B] SCT280.
[C] SCT028.
[D] SCT020.

**88 Providing the minimum sector altitude is not a determining factor, CAVOK in a TAF or METAR:**

[A] Means visibility 10nm or more, and no scattered cloud below 5.000ft.
[B] Means visibility 10nm or more, and no cloud below 5.000ft.
[C] Means visibility 10km or more, and no cloud below 5.000ft.
[D] Means visibility 10km or more, and few cloud below 5.000ft.

**89 Which of the following correctly decodes a TAF that reads: LYBE 161100Z 1612/1712 VRB08KT9999 SCT025?**

[A] Observed at 1611UTC; the surface wind was variable in direction and speed; averaging 8kt: with a visibility of 10km or more, and a cloud base of 2.500ft above aerodrome level.
[B] Valid from 1612 to 1712 UTC; surface wind variable at 8kt; visibility 10nm or more; with a cloud base of 2.500ft above mean sea level.
[C] Observed at 1612 UTC; the surface wind was variable in direction and speed; with a visibility of 10km, and a cloud base of 2.500ft above ground level.
[D] Valid from 1200 Hr on the 16 of the month to 1200 Hr on the 17 of the month; surface wind will be variable in direction at 8kt with a visibility of 10km or more; 3to4 oktas of cloud with a base of 2.500ft above the aerodrome.

**90 BECMG 1621/1701 BKN030 in a TAF means:**

[A] Becoming between 1621 UTC and 1701 UTC 3-4 oktas of cloud at 300 ft agl.
[B] Becoming from 1621 UTC 3-4 oktas of cloud at 300 ft agl.
[C] Becoming from 1621 UTC 5-7 oktas of cloud at 3000 ft agl.
[D] Becoming between 2100 UTC on the 16 of the month and 0100 UTC on the 17 of the month 5-7 oktas of cloud at 3000 ft agl.

**91 What does this symbol represent on a forecast chart? (See LAPL/PPL 050-03)**

[A] Thunderstorms.
[B] Severe icing.
[C] Severe mountain waves.
[D] Severe turbulence.

**92 What does this symbol represent on a forecast chart? (See LAPL/PPL 050-04)**

[A] Severe icing.
[B] Thunderstorms.
[C] Severe turbulence.
[D] Severe mountain waves.

**93 What is the validity time for a WAFC significant weather chart?**

[A] 6 hours.
[B] For a single fixed time only.
[C] 3 hours.
[D] 30 minutes.

**94 On WAFC significant weather charts what do the letters "CB" implies?**

[A] Moderate to severe icing and turbulence and hail.
[B] Moderate to severe icing and turbulence.
[C] Moderate icing and turbulence.
[D] Severe icing and turbulence.

**95 A regional is a forecast of the weather up to?**

[A] FL010.
[B] FL180.
[C] FL100.
[D] FL240.

**96 VOLMETS are updated?**

[A] 4 times a day.
[B] Every hour.
[C] 2 times a day.
[D] Every half an hour.

**97 VOLMETS is defined as:**

[A] A teleprinter message of selected aerodrome TAFs and METARs.
[B] A text message of selected aerodrome METARS.
[C] A continuous radio broadcast of selected aerodrome actual weather observations and forecasts.
[D] A radio broadcast of selected aerodrome forecasts.

**98 VOLMETS are?**

[A] Air to ground radio transmissions on HF and VHF.
[B] Ground to air radio transmissions on HF and VHF.
[C] Ground to air radio transmissions on LF and VHF.
[D] Air to ground radio transmissions on HF and SVHF.

**99 When are ATIS broadcasts updated?**

[A] Any time the aerodrome or weather information changes.
[B] Only when the aerodrome information changes.
[C] Every hour.
[D] Every 30 minutes.

**100 What is the ATIS?**

[A] A chart of current aerodrome and weather information.
[B] A printed text report of current aerodrome and weather information.
[C] A continuous broadcast of current aerodrome and weather information.
[D] A continuous broadcast of weather information.

**101 In the ATIS broadcast, what is used to identify the current report?**

[A] A number.
[B] An alphabetical code.
[C] An issue time.
[D] A validity time.

**102 On what frequency range is the ATIS usually broadcast?**

[A] ADR.
[B] HF.
[C] VHF.
[D] LF.

**103 What air temperature may we expect at 7000 ft if the air temperature at 1500 ft is 15°C?**

[A] +4°C.
[B] 0°C.
[C] +3°C.
[D] -2°C.

**104 What wind represents depicted symbol from meteorological charts? (See LAPL/PPL 050-05)**

[A] West wind at 60 knots.
[B] South wind at 15 knots.
[C] East wind at 15 knots.
[D] North wind at 60 knots.

**105 Every physical process of weather is accompanied by or is the result of a:**

[A] Movement of air.
[B] Pressure differential.
[C] Heat exchange.
[D] Humidity differential.

**106 What weather phenomena is associated with a temperature inversion?**

[A] An unstable layer of air.
[B] Thunderstorms inside air masses.
[C] A stable layer of air.
[D] Ascending winds on mountain slopes.

**107 The most frequent type of ground or surface-based temperature inversion is that which is produced by:**

[A] The movement of colder air under warm air, or the movement of warm air over cold air.
[B] Terrestrial radiation on a clear, relatively still night.
[C] Warm air being lifted rapidly aloft in the vicinity of mountainous terrain.
[D] Terrestrial radiation on a cloudy, relatively windy night.

**108 The amount of water vapor which air can hold depends on the:**

[A] Dewpoint.
[B] Air pressure.
[C] Air temperature.
[D] Stability of the air.

**109 What is the approximate airfield dewpoint if the surface air temperature is 20 °C and the reported base of the cumulus clouds is 1100m above the airfield level?**

[A] 5°C.
[B] 11°C.
[C] -3°C.
[D] 7°C.

**110 What are the characteristics of an unstable air mass?**

[A] Stratus type clouds and poor surface visibility.
[B] Turbulence and good surface visibility.
[C] Nimbostratus clouds and good surface visibility.
[D] Turbulence and poor surface visibility.

**111 What types clouds usually accompany the passage of a warm front?**

[A] CI, CS, AS, NS.
[B] CC, SC, ST, NS.
[C] CC, AC, CU, CB.
[D] CI, CC, NS, CB.

**112 Which weather conditions should be expected beneath a low-level temperature inversion layer when the relative humidity is high?**

[A] Smooth air, poor visibility, fog, haze, or low clouds.
[B] Turbulent air and good visibility.
[C] Turbulent air, poor visibility, fog, low stratus type clouds, and showery precipitation.
[D] Light windshear, poor visibility, haze, and light rain.

**113 What value is being calculated by following formula? Temperature minus dewpoint times 123 = ?**

[A] Tops of stratus clouds in meters.
[B] Ceiling of cumulus clouds in meters.
[C] Temperature aloft.
[D] Relative humidity.

**114 What is the approximate base of cumulus clouds if the surface air temperature is 27°C and the dewpoint is 15°C?**

[A] 1.500m.
[B] 1.000m.
[C] 2.700m.
[D] 2.000m.

**115 What approximate base of cumulus clouds should be expected if the surface air dewpoint is 5°C and the forecasted daily maximum temperature is 25°C?**

[A] 2.800m.
[B] 2.000m.
[C] 1.500m.
[D] 2.500m.

**116 With what type of clouds are shower precipitations associated?**

[A] ST.
[B] CB.
[C] CI.
[D] NS.

**117 Thunderstorms reach their greatest intensity during the:**

[A] Mature stage.
[B] Dissipating stage.
[C] Downdraft stage.
[D] Cumulus stage.

**118 There is thunderstorm activity in the vicinity of an airport at which you plan to land, which hazardous atmospheric phenomenon might be expected on the landing approach?**

[A] Steady rain.
[B] Windshear.
[C] Light showers.
[D] Precipitation static.

**119 Where does windshear occur?**

[A] Only at higher altitudes.
[B] At all altitudes, in all directions.
[C] Only during the rain.
[D] Only at lower altitudes.

**120 Why is frost considered hazardous to flight?**

[A] Frost slows the airflow over the airfoils, thereby increasing control effectiveness.
[B] Frost spoils the smooth flow of air over the wings, thereby decreasing lifting capability.
[C] Frost changes the basic aerodynamic shape of the airfoils, thereby increasing lift.
[D] Frost increases the aircrafts weight.

**121 In which environment is aircraft structural ice most likely to have the highest accumulation rate?**

[A] Cumulus clouds with below freezing temperatures.
[B] Fog, temperature -25°C.
[C] Freezing drizzle.
[D] Freezing rain.

**122 What type of precipitations was observed accordingly to the following METAR report?**

**METAR LSZH 131630Z 24008KT 0600 R16/1000U FG DZ FEW003 SCT010 OVC020 17/16 Q1018 BECMG TL1700 0800 FG BECMG AT1800 9999 NSW=**

[A] Rain showers.
[B] Steady and light rain.
[C] Hail.
[D] Moderate drizzle.

**123 What was the ceiling of the lowest cloud layer accordingly to the following METAR report?**

**METAR LSZH 131630Z 24008KT 0600 R16/1000U FG DZ FEW003 SCT010 OVC020 17/16 Q1018 BECMG TL1700 0800 FG BECMG AT1800 9999 NSW=**

[A] 300ft.
[B] 100 ft.
[C] 10 ft.
[D] 1.000m.

**124 Accordingly to the code which of the following METAR reports could be partially abbreviated by CAVOK (minimum sector altitude 4000 ft)?**

[A] 27019G37KT 9999 BKN050 18/14 Q1016 NOSIG=
[B] 00000KT 0100 FG VV001 11/11 Q1025 BECMG 0500=
[C] 34004KT 7000 MIFG SCT260 09/08 Q1019 NOSIG=
[D] 26012KT 8000 -SHRA BKN025TCU 16/12 Q1018 NOSIG=

**125 What kind of weather is forecast for the period after 12:00 UTC?**

**TAF LYBE 160500Z 1606/1706 13010KT 9000 BKN020 BECMG 1606/1608 SCT015CB BKN020 TEMPO 1608/1612 17012G22KT 1000 TSRA SCT010CB BKN020 FM161200 15006KT 9999 BKN020 BKN100=**

[A] Moderate southeasterly wind with visibility improvement to more than 10 km, precipitations will stop, cloudiness will become greater with ceiling at 600 m.
[B] Southeasterly wind 6 kts, visibility will be convenient for visual flying and the sky will be completely covered with clouds with base at 600 m.
[C] Visibility will improve to 5 km to 10 km and cloud covering will decrease to 1/8 at 600 m and 1/8 at 3.000 m.
[D] Rainy weather with showers and gusty wind and visibility below 10 km.

**126 What are the codes for "Fog" and "Mist" in weather reports?**

[A] FG and BR
[B] FO and MZ
[C] FG and MZ
[D] FG and MZ

**127 Gusts are reported in weather reports:**

[A] When they are over 20 kts from average wind
[B] When they are more than 10 kts from average wind
[C] When they are over 15 kts from average wind
[D] When they are over 5 kts from average wind

**128 In cumulonimbus clouds there are large supercooled water droplets that form:**

[A] Rime ice
[B] Clear ice
[C] Steel ice
[D] Hoar ice

**129 The abbreviation "SWC" means:**

[A] Space weather chart
[B] Surface weather chart
[C] Significant weather chart
[D] Special weather chart

**130 Wind is caused by:**

[A] Air density
[B] The Coriolis force
[C] Temperature differences
[D] Pressure differences

**131 What is the code for "hail" in weather reports?**

[A] HA
[B] RA
[C] SG
[D] GR

**132 Low-pressure area in Northern hemisphere spins:**

[A] It depends on the season
[B] Clockwise
[C] Counter-clockwise
[D] Both counter-clockwise and clockwise

**133 What is the code for "drizzle" in weather reports?**

[A] SN
[B] TS
[C] DR
[D] DZ

**134 What is the code for "nearby the aerodrome" in weather reports?**

[A] CV
[B] YM
[C] VC
[D] CL

**135 A line on a weather chart connecting points of equal atmospheric pressure is called:**

[A] Front
[B] Isotax
[C] Isobar
[D] Millibar

**136 The atmospheric pressure (QNH) reported in METARs is adjusted to:**

[A] Aerodrome's altitude
[B] Reference altitude
[C] Mean sea level
[D] Transition level in use

**137 Transition altitude is in Finland:**

[A] Same as transition level
[B] 5001 FT (AGL)
[C] 5000 FT (QNH)
[D] Same as transition layer

**138 TEMPO group in weather report means:**

[A] Conditions which are expected to last for generally less than half the time period of whole change group.
[B] That the probability of an occasional phenomenon to occur is over 30%.
[C] Weather changes rapidly in given limitations.
[D] Rapid, max. half an hour lasting changes occurs.

**139 "CEILING" is:**

[A] The vertical distance of cloud base's lowest and highest point
[B] The lowest height of CB or TCU cloud base
[C] The height of the lowest cloud base (the amount of the clouds does not matter)
[D] Is a measurement of the height of the lowest clouds that cover more than half of the sky relative to the ground

**140 "CAVOK" term is used in weather reports when:**

[A] Visibility is min. 10 km, ceiling is min. 5000 ft and no significant weather change
[B] Visibility is max. 10 km, ceiling is max. 5000 ft and no significant weather change
[C] Visibility is max. 10 km, ceiling is max. 1500 ft and no significant weather change
[D] Visibility is min. 10 km, ceiling is min. 1500 ft and no significant weather change

**141 FEW in weather report means that:**

[A] 3-4/8 of the sky is occupied by clouds
[B] 8/8 of the sky is occupied by clouds
[C] 1-2/8 of the sky is occupied by clouds
[D] 4-7/8 of the sky is occupied by clouds

**142 Inversion is a layer in the atmosphere where:**

[A] Air humidity increases with height
[B] Air humidity decreases with height
[C] Air temperature increases with height
[D] Air temperature decreases with height

**143 "Thundercloud" is officially known as:**

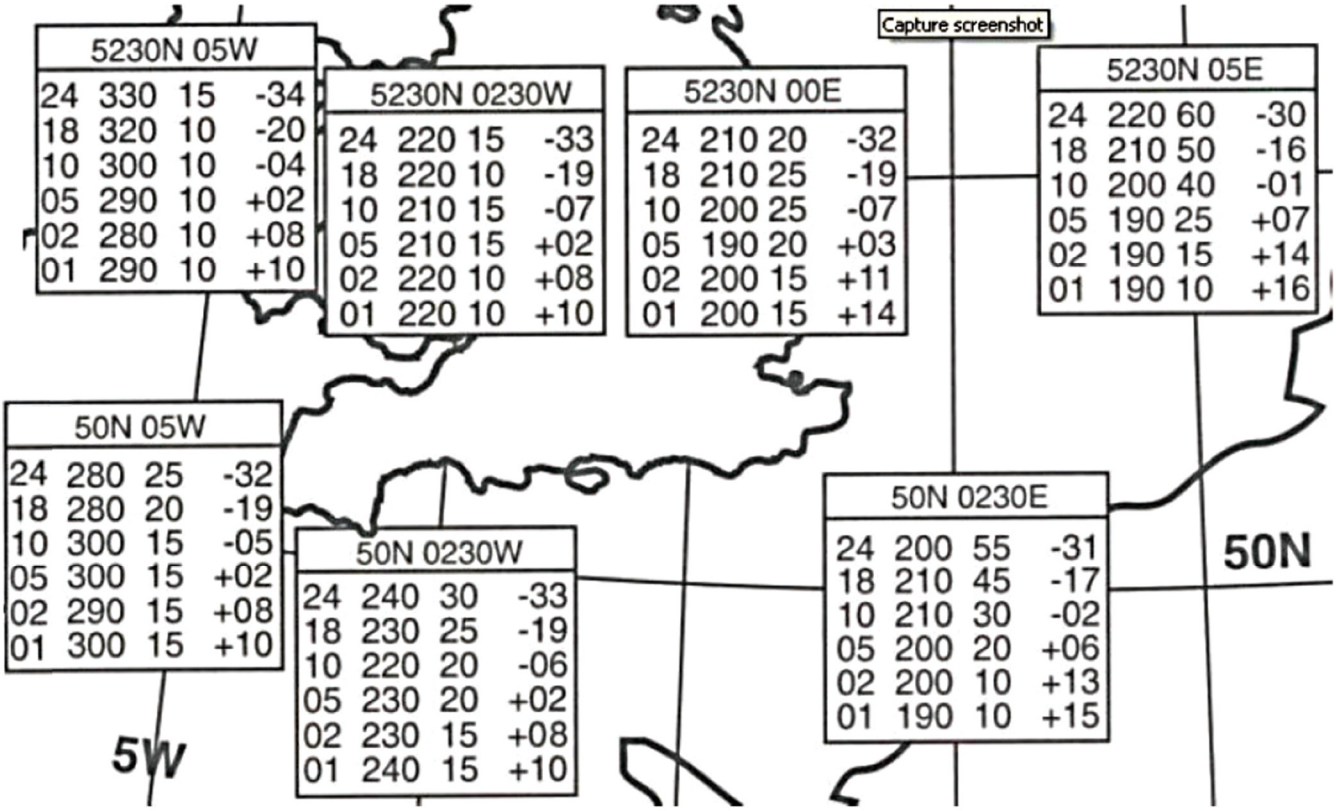
[A] Nimbostratus
[B] Altocumulus
[C] Cirrostratus
[D] Cumulonimbus

**144 Continuous rain is usually from:**

[A] Nimbostratus
[B] Cumulus
[C] Stratocumulus
[D] Stratus

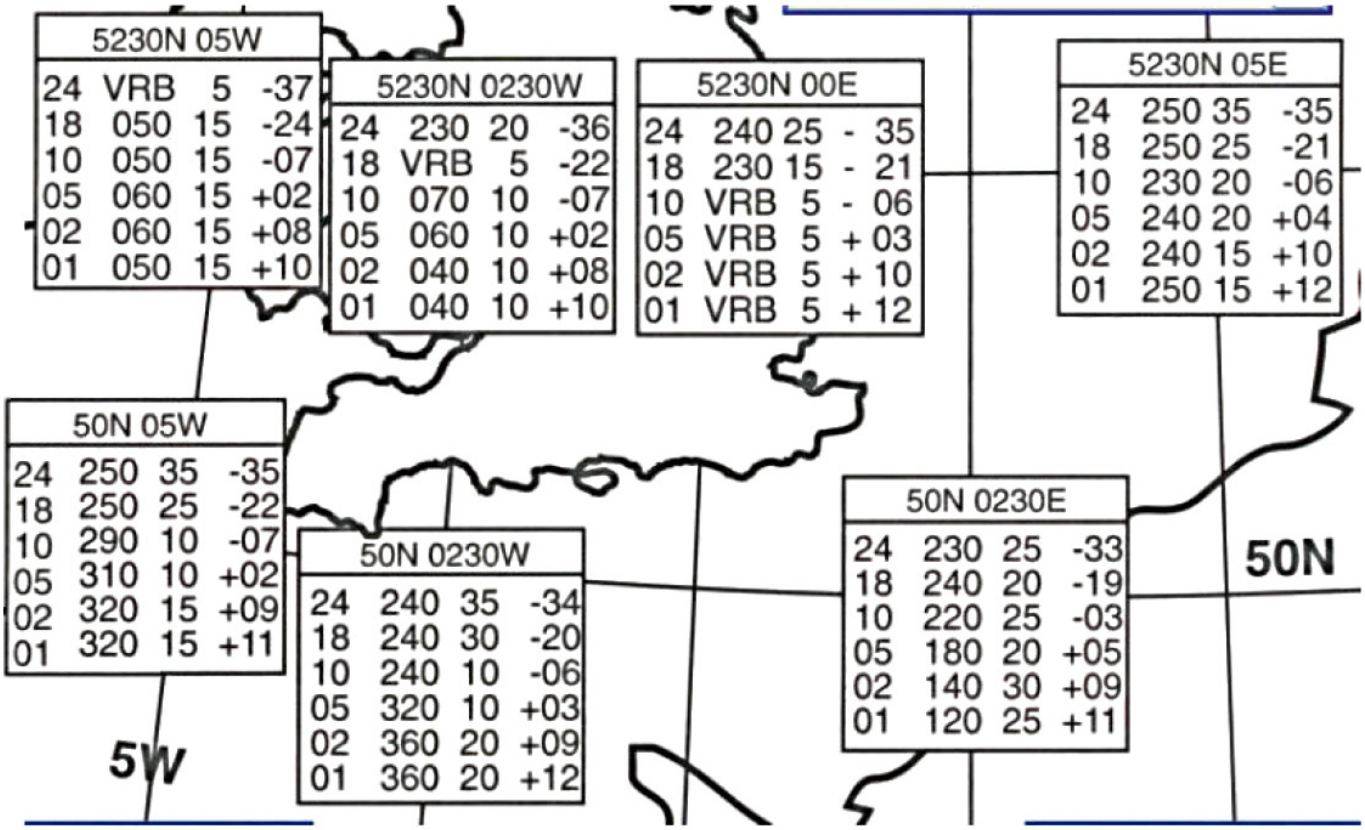
# METEOROLOGY

## Appendix
## LAPL/PPL 050-01



METEOROLOGY

Appendix
LAPL/PPL 050-02



METEOROLOGY

Appendix
LAPL/PPL 050-03

Appendix
LAPL/PPL 050-04

Appendix
LAPL/PPL 050-05